Communicating to consumers in Sweden with eco-labels

-Is the message getting through?

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“Al final de mi vida me gustaría arrepentirme de las cosas que no salieron bien, pero no de las cosas que no llegué a hacer”

Rafael Rosales Muñoz (Un soñador despierto)

I would like to especially thank my husband for all of his love and support. Without him, none of this would be possible. - Annie
Abstract

Sustainable consumption has become a crucial factor to consider for both consumers and manufacturing firms. Green marketing practices, or marketing activities aimed at decreasing the impact on the environment, have been incorporated into many business plans to combat old habits of wastefulness and pollution. One very popular method that has come to prominence over the recent years is eco-labeling of products and services. Eco-labels are logos that represent that a product or service has met standardized criteria set by a certifying organization and that it is deemed a sustainable option in its product category. The focus of this study will center on well-known and established eco-labels in the Swedish market, namely the Swan, Bra Miljöval, KRAV, EU-Ecolabel and the Marine Stewardship Council eco-labels.

Eco-labels are tools for communication which can be used to facilitate the practice of sustainable consumption. However, there are many factors that influence the consumer’s ability to understand the message of the eco-label which in turn can affect their capacity to adopt the sustainable behavior. The purpose of this study is to determine if Swedish consumers understand the eco-label’s message and if this message affects their green purchasing. These results were related to message quality as defined by the International Standards Organization 14063 standard for environmental communication (2004 cited in Strömdahl, 2005, p. 15; Von Ahn & Wikström, 2005, p. 33-34) and other notable factors found from a literature review. The following research questions were answered:

- Do consumers understand the message of an eco-label?
  - What are the factors related to understanding the eco-label?
- Do awareness and understanding affect purchase behavior of and eco-label?
  - What are the factors related to the purchase of eco-labeled products?

A quantitative approach has been used in this research project and a survey has been administered at supermarkets in the Umeå area. To confirm the message of the eco-labels, a semi-structured interview was conducted with the issuing organizations prior to designing the questionnaire. A total of 152 responses were collected from the survey and analyzed with frequency distributions, independent sample t-tests and contingency tables where a significance level of chi-square of .05 or lower was required.

The results of the study indicate that customer understanding and purchase behavior varied by each eco-label. Message quality can have a significant impact on understanding of the eco-label. Also, other personal factors were related to understanding and purchase behavior with nationality giving evidence of the strongest relationship.

Key words: Eco-label, Marketing Communications, Green Marketing, Environmental Friendly Products
Table of Contents

Chapter 1: Introduction ............................................................................................................... 1
  1.1 Sustainability and consumer goods ................................................................. 1
  1.2 Eco-labeling and sustainability ........................................................................ 2
  1.3 Problem formulation ......................................................................................... 3
    1.3.1 Research questions and purpose ............................................................... 3
    1.3.2 Limitations .................................................................................................. 4
    1.3.3 Definitions of key terms ............................................................................. 4

Chapter 2: Theoretical Framework ............................................................................................ 6
  2.1 Marketing Communications: Conveying a message .................................. 6
    2.1.1 Kotler’s macromodel of sending a message ........................................ 8
  2.2 Eco-labeling .............................................................................................................. 9
  2.3 Eco-labeling certification and actors on the market ........................................ 11
  2.4 Eco-labels within Sweden .................................................................................... 13
    2.4.1 The Swan Eco-label (Svanen) ................................................................. 14
    2.4.2 The Good Environmental Choice Eco-label (Bra miljöval) .......... 14
    2.4.3 KRAV ....................................................................................................... 15
    2.4.4 Marine Stewardship Council (MSC) ...................................................... 16
    2.4.5 EU organic farming eco-label (EU:s märkning för ekologiskt jordbruk, often referred to as the Euro-Leaf) ..................................................... 17
  2.5 The Eco-label adoption process ......................................................................... 18
  2.6 The ISO 14063 standard for environmental communication .................... 20
  2.7 Summary of theoretical framework ................................................................ 22

Chapter 3: Theoretical Methodology ........................................................................................ 24
  3.1 Research process ................................................................................................. 24
  3.2 Research philosophy ......................................................................................... 25
  3.3 Research approach ............................................................................................ 27
  3.4 Research strategy ............................................................................................... 29
    3.4.1 Questionnaire ............................................................................................ 30
    3.4.2 Sampling ................................................................................................... 30
    3.4.3 Literature search ....................................................................................... 31
  3.5 Authors’ preconceptions ................................................................................... 31

Chapter 4: Practical Methodology ............................................................................................ 32
  4.1 Applying the quantitative approach ................................................................. 32
Appendices

Appendix 1 - Questionnaire in English
Appendix 2 - Questionnaire in Swedish
Appendix 3 – Semi-structured Interview
List of Figures

Figure 1: Elements in the communication process, p. 8
Figure 2: Classification of product environmental labels by type, p.11
Figure 3: Eco-labeling and the actors on the market, p.12
Figure 4: Eco-label adoption process, p.20
Figure 5: Principles of GRI - Global Reporting Initiative viewed from a 14063 perspective, p.21
Figure 6: Conceptual Framework, p. 22
Figure 7: The research onion, p.25
Figure 8: Research philosophies, p.26
Figure 9: Deductive versus Inductive approach, p.28
Figure 10: Questionnaire design in relation to theory, p.35

List of Tables

Table 1: Results of eco-label Awareness, p.39
Table 2: Results of eco-label Understanding, p.40
Table 3: Results of Recent Purchase Behavior and Message Quality, p.42
Table 4: Message Quality in relation to Understanding of the eco-label, p.46
Table 5: Message Quality in relation to Awareness of the eco-label, p.46
Table 6: Message Quality in relation to Recent Purchase Behavior of the eco-label, p.47
Table 7: Factors affecting Understanding of the eco-label, p.50
Table 8: Factors affecting Awareness of the eco-label, p. 50
Table 9: Factors affecting Recent Purchase Behavior of the eco-label, p.51
Table 10: Is the message getting through?, p.53
Chapter 1: Introduction

We are living in a world where resources are limited for the current and future generations. People are consuming resources at a faster pace than sustainably possible and as a result the planet is being exploited. Some natural phenomena, such as: the melting of glaciers, the hole in ozone layer or the disappearance of many plants and animal species, are showing society that a new model of consumption and development is necessary (Munier, 2005, p. 3).

Recent research has found that the current model of consumption and development is unsustainable in the short and long term. It has been documented that society is consuming more resources than the planet can produce and the ecological footprint exceeds the earth’s biocapacity (World Wild Fund for Nature [WWF], 2010, p.8). Society should act with consideration and not dismiss or underestimate these current findings and future predictions. Exposing these facts to consumers could lead to consumption changes that minimize the impact made by the inhabitants on earth. A new model has been discussed and adopted by many individuals and business to combat this pollution to the planet - sustainable development (Marhold & Meimeth, 2009; Kenny & Meadowcroft, 1999).

The concerns about sustainable development are on the rise and have become an increasing influence on people lives and the manner with which firms conduct their business. The understanding of the necessities for change in order to achieve sustainability on the planet is a growing concern. A good example of a sustainable initiative with worldwide reach is the Kyoto protocol, an international agreement signed by 37 countries all committed to reducing greenhouse gas emissions (United Nations Framework Convention on Climate Change, 2011). The United Nations states in its world population report that societal responses and changes, such as the Kyoto Protocol, are needed in order to maintain the welfare state because not all societies are prepared to deal with the upcoming population growth and continued unsustainable tendencies (United Nations, 2004, p.82).

Research has shown that sustainability is a continual process that has to be adopted by human beings and not just a one-time goal; it should be achieved by reducing the consumption and increasing efficiency, i.e. by generating less garbage, developing a more natural agriculture, among other practices (Munier, 2005, p. 1). The number of mechanisms and tools available to achieve these goals is high and diverse. Also, governments and public institutions have played an important role in terms of awareness and campaigns to increase social welfare through social marketing. However, obstacles to sustainable consumption and development can still be created by corporations that demand cheap resources and labor (Schor, 2005, p.317).

1.1 Sustainability and consumer goods

Sustainability has become more prominent trend and one of the most important and fastest-growing practices concerns the individual consumer; the consumption of environmental friendly products that have a smaller impact on the environment is taking-over on retailer

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1 According to WWF: “The Ecological Footprint tracks the area of biologically productive land and water required to provide the renewable resources people use, and includes the space needed for infrastructure and vegetation to absorb waste carbon dioxide (CO2).”
shops, wholesaler and small businesses. Consumer products are responsible for a large amount of the total waste produced in the planet. With this knowledge becoming widespread, consumers are now more engaged in the effects of their purchasing and are concerned with their impact on the environment. Green marketing is a response to this trend and can be defined as “marketing activities which attempt to reduce the negative social and environmental impacts of existing products and production systems, and which promote less damaging products and services” (Peattie, 2001, p. 129). It has a prominent position in businesses today due to the powerful green consumerism movement in the world (Peattie, 2001, p. 129; Kuhre, 1997, p. 4). It has become a method to differentiate and create added value for their products and in that way capture some of the “green demand” (Peattie, 2001, p. 133). The green consumer has identified as an individual whose interest in the environment could influence their purchasing behavior to favor more sustainable products (Peattie, 2001, p. 3-23). Companies were also benefiting from this trend; by incorporating green practices in their business they were able to decrease costs and appeal to a greener demographic. For example, Porter and Van Der Linde (1995, p. 120) reported a trend in companies benefiting from the increase in innovation that came along with finding new greener alternatives for their consumers. Through their search for new or improved solutions they were able to streamline processes to decrease costs and reach green consumers creating a win-win solution (Porter & Van Der Linde, 1995, p. 133; Peattie & Crane, 2005, p. 368).

1.2 Eco-labeling and sustainability

With the strong tendency towards increasing sustainable practices, there have been several marketing techniques that have been utilized in order to communicate the companies’ green actions to the consumer. One of the fastest growing trends to aid in the adoption of sustainable practices is eco-labeling. An eco-label provides point of purchase information regarding the product’s environmental quality. It is intended to be used as a tool when choosing the most sustainable product possible from those in the desired product category (Thøgersen, Haugaard & Olesen, 2010, p. 1787). Germany introduced the first government sponsored eco-label, The Blue Angel, in 1977 (Reitsch, 2001, p.1-2) and since then 377 eco-labels have been introduced in 211 countries and in 25 industry sectors (Global Eco-labeling Network [GEN], 2004).

The practice of promoting environmentally friendly products is related to eco-labeling as a means to understand "...through communication of verifiable and accurate information, that is not misleading, on environmental aspects of products and services, to encourage the demand for and supply of those products and services that cause less stress on the environment, thereby stimulating the potential for market-driven continuous environmental improvement” (International Standard Organization [ISO], 2000 cited in GEN, 2004, p.1). Transparency and trust are two key factors that the eco-label endorses to the consumer (Thøgersen et al., 2010, p. 1787). The consumer is able to make an informed voluntary decision based on the eco-labels presence and their knowledge of what it stands for. By using the eco-label the consumer can be aided in making sustainable lifestyle choices and also save time and effort in making their decisions (Grunert & Wills, 2007, p. 385).
1.3 Problem formulation

The consumption of environmental friendly products has grown immensely in the last years. People want to be respectful with the environment, but if the message between producer/distributor and consumer is misleading then most of the green marketing efforts will be in vain. According to the International Organization for Standardization (ISO), the purpose of the eco-labeling is to encourage the demand of those products that cause less stress to the environment through communication and information that is not misleading (ISO, 2000 cited in GEN, 2004, p.1). The terms “communication” and “not misleading” are of great interest to this study due to the ability for them to be applied from a marketing communications perspective. They are vital to the adoption of a more sustainable lifestyle since “informed product choices are a prerequisite for the greening of consumption” (Leire & Thidell, 2005, p. 1061). These two aspects of green marketing have lead to the creation of the purpose of this thesis and will be investigated with this research.

Previous research has shown that there are still problems on communication and understanding of eco-labeled products; even if awareness is high the consumers ability to understand it can be low (Liere & Thidell, 205, p. 1064). Also, it is reported that there are too many eco-labels that lead to information overload (Organization for Economic Co-operation and Development [OECD], 2007; Pedersen & Neergaard, 2006; Thogersen et al., 2010). The message sent by these environmental friendly products could be unknown or misunderstood by consumers leading to inefficiency in the process of communication and distrust on the market. None of these outcomes are desirable for the participants on this process, or for the environment either.

The practices related with eco-labeling sustainable products are relatively new for society and, as stated above, there is evidence that future research is needed in relation to the understanding of eco-labels. This has influenced the purpose and direction that this research will be carried out. It is true that research has been made regarding communicating with an eco-labeling, but as gathered from our literature review, studies have a tendency to analyze one side of this process. Most research has been based on companies or consumers, but a low number of studies have analyzed both sides of the process. This is one of the main reasons why the approach of this research will be based on both sides of the process: the message sent by eco-label organizations and the message received by consumers.

1.3.1 Research questions and purpose

With the facts describe above, the research questions and sub-questions that will lead this study are the following:

- Do consumers understand the message of an eco-label?
  - What are the factors related to understanding the eco-label?
- Do awareness and understanding affect purchase behavior of and eco-label?
  - What are the factors related to the purchase of eco-labeled products?
This research aims to analyze the problems of communication in regards to sustainable products within the Swedish market. More specifically, this research will analyze the relationship between understanding eco-labels and consumer purchase behavior. The purpose of this research is to determine if the population of consumers in Sweden understands the message the eco-label represents as described by the certifying organization. Also, we are interested in determining if understanding is a major influencing factor behind green purchase behavior or if other factors affect it as well.

1.3.2 Limitations

This study aims to have a high generalizability, or the ability to surmise findings from the sample that can be expanded to a greater population (Bryman & Bell, 2007, p.728). Even with this goal, there are some limitations that may have an impact on this study and they must be acknowledged. Firstly, the sample for this study was gathered from four supermarkets in the areas of Örsta Ersboda, Strompilen and Alidhem in the Umeå region. The aim is to be able to generalize these findings to the greater population of consumers in Sweden; however, our sample is limited to that of the Umeå region due to time and cost constraints. City or region influences could have had an impact on our findings. Though, with a reported 115,700 inhabitants it is the largest city in the Northern Region of Sweden and we feel that these facts add to the generalizability of the study (Umeå Municipality, 2011).

Secondly, this study focuses on a specific subset of eco-labels, namely International Standards Organization (ISO) Type I eco-labels (a discussion regarding different types of eco-labels is discussed at length in section 2.2 Eco-labeling). The amount of eco-labels has risen greatly in recent years and has added to consumer confusion (OECD, 2007; Pedersen & Neergaard, 2006; Thøgersen et al., 2010). With the vast amount of eco-labels on the market and specific categories of types, we have chosen to limit this study to the most popular type in the market. By doing so, we aim to focus our findings in a manner that makes them as practically applicable as possible and increase the validity of this study for this specific area of eco-labeling. Although we are not able to generalize our findings to other types of eco-labels, we feel that the findings could have implications outside of this specific sample which could be applied in future research.

1.3.3 Definitions of key terms

**Eco-label:** A sign or logo that conveys that indicates an environmentally preferable product, service or company that is based on standards or criteria (Eco-label Index, 2011).

**Environmental friendly products:** Products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison applies to raw materials, manufacturing, packaging, distribution, use, reuse, operation, maintenance, and disposal (Eco-label Index, 2011).

**Green Marketing:** Marketing activities which attempt to reduce the negative social and environmental impacts of existing products and production systems, and which promote less damaging products and services (Peattie, 2001, p. 129).
Marketing communication: A mix of techniques or tools known as the communications mix, by which a message is delivered from one party in the communications exchange to another (Lewis & Littler, 1997 p.120).

Sustainable development: A method of using resources that is growing popularity aimed at producing long term global well-being through the wise use and management of economic and natural resources and through respect for people and other living things (Blackburn & William, 2007, p. xiii).
Chapter 2: Theoretical Framework

This chapter will discuss the foundation of the theoretical perspectives of Marketing Communications with a focus on eco-labeling. To begin with, the concept of sending a message will be elaborated on further in order to prepare to answer the research questions. Green consumer behavior will be introduced in order to give the reader a better understanding of the main stakeholder in this research. Lastly, the chapter will continue by narrowing down the theory of message communication via an eco-label; the consumer’s understanding of eco-labels and responding to them will be explored.

2.1 Marketing Communications: Conveying a message

Marketing communication is “the means by which firms attempt to inform, persuade and remind consumers—directly or indirectly—about the products and brands that they sell” (Kotler, 2009, p.536). According to this definition, marketing communication should be used as a tool to bring the message of what a company sells and does for the customers. It is the medium used to build awareness and understanding between customers and companies. Some different tools can be used in marketing communication. The term used for these tools is “Communications mix” and they are presented briefly below (Adapted from Pelsmacker, 2010, p.4; Kotler, 2009, p.536). The reason for choosing both authors as sources is based on their complimentary findings and their expertise in the field. Kotler (2009, p. 536) has defined 6 key elements for the marketing mix, while Pelsmacker (2010, p. 4) has identified 9 elements, including E-communication: a relatively new strategy on the mix of communications. Furthermore, both authors have good examples and definitions of the tools explained below.

- **Advertising** is defined as “any paid form of non-personal presentation and promotion of ideas, goods or services by an identified sponsor” (Kotler, 2009, p.536). One of the most important characteristics of advertising is that it is paid. The economical component also leads to other important aspects, such as: the content of the message is controlled by the sender and there is no distortion or lose of information. There are many different channels to advertise: magazines, TV commercials, radio, newspaper etc.

- **Sales Promotion** is defined as “a variety of short-term incentives to encourage trial or purchase of a product or service” (Kotler, 2009, p.536). The main characteristic of this tool is time. A sales promotion is made with the objective of increase sales in a predetermined and relatively short period of time. It is a non-permanent strategy for the short-term and in this period the product or service has an extra added value. The instruments to make a promotion can be coupons with discounts, extra product, free samples, loyalty programs etc. (Pelsmacker, 2010, p.4).

- **Sponsorship** is defined as “the provision of assistance, financial or in kind, to an activity by a commercial organization, for the purpose of achieving commercial objectives” (Lewis & Littler, 1997, p. 230). A common example of this type of marketing communications is that of professional athletes who are granted equipment and clothing which has a firm’s brand on it. The firm benefits from the association of their brand with the athlete which may convey the message that the well-known athlete chooses and supports this brand over others.
- **Public relations and publicity** is defined as the “form of communication that seeks to make use of publicity and other nonpaid forms of promotion and information to influence the feelings, opinions or beliefs about the company or its products or services” (American Marketing Association [AMA], 1995, p.230). The main characteristic of public relations is that it is nonpaid. Companies can communicate by using public relations at a cheaper cost than advertising but the cons are that the sender has no control on the message. For example in the case of a press release, the decision of the final content is made by the editor of the newspaper, and not by the company which sends the message.

- **Point-of-purchase communications** is defined as “advertising display material on show at the point of sale. It is designed to call attention of the product and remind the customer the message used in a campaign” (Yadin, 2002, p.293). The communication at the point of sale is an important factor because according to the *Consumer Buying Habits Study* by the Point Of Purchase Advertising Institute [POPAI] (1997, p.2), more than 74% of the purchase decisions are made at the point-of-purchase. Marketers and managers should consider these findings and develop a good strategy of communications. Most of the consumers arrive to the point of sale with an idea of the products they intend to buy but the purchase process changes at the last minute when looking at the shelves. They then end up with products that initially did not plan to buy after an impulse purchase.

- **Exhibitions** can be define as “a venue at which products and services or works of art are put on show, either for business transactions or inspection and enjoyment” (Yadin, 2002, p.137) and **trade fair** “an exhibition held to promote products and services to professionals, trade and technical buyers” (Yadin, 2002, p.392). Both events are generally made to invite both actual and potential customers and they are very useful as a tool for the firm’s image. This tool of the marketing mix is especially important for business to business marketing.

- **Direct marketing communication** is defined as “a technique comprising an interactive system of marketing, which uses one or more communications media for the purpose of soliciting a direct and measurable consumer response” (Lewis & Littler, 1997, p.48). The different instruments that can be used for direct marketing are direct mail, print, telephone etc.

- **Personal selling**: “Delivery of a specially designed message to a prospect by a seller, usually in the form of face-to-face communication, personal correspondence, or a personal telephone conversation” (Imber & Toffler, 1994, p.416). Personal selling is one of the most traditional practices of marketing but it presents some cons: the cost of recruiting and training personal is expensive and in comparison with other tools, it can reach a low number of costumers.

- **E-communication** is the area of the marketing mix which offers new ways to communicate interactively with different stakeholders. Internet, together with e-commerce combines the practice of communicating with selling (Pelsmacker (2010) p.5). The advantages of e-communications are that a higher number of international audiences can be reached faster and at a lower cost.
2.1.1 Kotler’s macromodel of sending a message

The process of conveying a message follows the similar pattern as exhibited by Kotler’s macromodel when applying any of the tools from the communication mix (Kotler, 2009, p.539). The **Message** is the main element on the communication process “consisting on the information passed from the sender to the receiver” (Imber & Toffler, 1994, p.359). The model exhibits the key players which must work together to develop effective communication at the most basic level, the Sender and Receiver. The **Sender** is the originator of the message and must know what audiences they want to reach and what responses they want to get (Kotler, 2009, p.539). In regards to eco-labeling, the role of Sender can be adapted to this study as the certifying organization of the eco-label or the manufacturer of the product. The certifying organization is the true originator of the message though since they create the environmentally friendly standards that are being sent to the consumer. For this reason, they will be the focus of the role of the Sender in this research. The **Receiver** is the person or group of people to whom the message is transmitted. The Receiver perceives and responds to the message in terms of his own background and psychological processes (Imber & Toffler, 1994, p.470). The Receivers for this research are the consumers of eco-label goods. The type of media that pertains to this research is that of the eco-label itself, or the logo that indicates that the product or service has been certified. The reason why it is important to understand the mix of communications relates to the quality of the message and more important with the way on transmitting the message to customers. In order to communicate a message the elements explained above should be combined in a proper way. For this study concretely, researchers have asked some of the companies in charge of the eco-labels which of these tools they used when communicating the message and they had the option to choose among these tools.

The process of communicating a message begins with the Sender. The message is encoded via one of the tools from the communication mix, or as is it referred to in this model the **Media**, before it is transmitted from Sender to Receiver. The media is the channel that carries the Sender’s messages to reach the target audience and develop feedback channels to monitor the responses (Kotler, 2009, p.539). **Encoding** is an important phase on the process of communication because the Sender is responsible for assuring that the sent information is understandable and clear. The Receiver must then **Decode** the message in order to fully process its meaning. Together with the process of encoding, decoding the message properly is vital in order to reach a harmony between Sender, message and Receiver. The Receiver can

![Figure 1: Elements in the communication process](Kotler, 2009, p.539)
then send a **Response** to the sent message, which the Sender can gain as **Feedback**. Within marketing, Feedback can be the audience response from which advertisers can glean information about how well the message is received, the environment in which is received and the temperament and attitude of the consumer upon its perception (Imber & Toffler, 1994, p. 215).

For the purpose of this research, we can say that the certifying organization or firm is attempting to communicate a message of sustainability via their eco-label to the consumer. We are attempting to determine what factors are related to the understanding of an eco-label. When applying this model it is evident that the main interference that can hinder understanding a message is Noise. The basic definition of Noise could be “physical disturbance to a communication message during the process of its transmission” (Lewis & Littler, 1997, p.140). An example of this definition could be the distortion made when talking on the phone and suddenly the person lost coverage.

Kotler expands on the concept of Noise to adapt it to the field of marketing and defines it as “random and competing messages that may interfere with the intended communication” (2009, p.539). In this way, Noise can be understood as something outside of the physical realm which hinders message transmission or receiving, such as: attitudes or beliefs. More specifically when applied to this research, Noise can be considered the factors that cause misunderstanding between what eco-labeling represents and what customers understand. This concept of noise will be applied to the rest of the research, with the objective to provide a better understanding of the process of eco-label adoption. We have considered this model within the field of marketing communications and feel that further analysis is required in order to truly apply and comprehend this process within the area of communicating with eco-labels.

### 2.2 Eco-labeling

There are many eco-labels present in the world today. According to the Global Eco-label Network (GEN), a non-profit association founded in 1994 to improve, promote, and develop the eco-labeling of products and services, an eco-label is:

> “a label which identifies overall environmental preference of a product or service within a specific product/service category based on life cycle considerations. In contrast to "green" symbols or claim statements developed by manufacturers and service providers, an eco-label is awarded by an impartial third-party in relation to certain products or services that are independently determined to meet environmental leadership criteria” (GEN, 2011).

This is explains the basic concept of every eco-label; it is a standardized label used to indicate sustainability to consumers when they intend to purchase something. Several types of environmental labels exist today which depend upon two main features of the label: whether it is mandatory or voluntary and which organization certifies the product (Horne, 2009, p. 176). The breakdown of the different types of environmental labeling can be viewed in Figure 2 on page 11. It is shown in the figure that the mandatory labels are required by law in order to
keep consumers safe, such as: displaying danger symbols and declaring contents of the product, or to inform them of essential information for everyday living, such as: water and energy consumption. On the other hand voluntary labels are not required by law but have been adopted quite heavily due to the increase trend in adopting sustainable practices by the consumer.

The International Standards Organization (ISO) dominates the field of voluntary environmental labels. It is a worldwide network built from 159 member countries which encourages international standardization in the areas of science, technology and economics (ISO, 2011). Environmental labels can also be certified by other multi-product groups tackling specific causes; however, the ISO standards are the most published in the world and referred to most often in the literature (Kuhre, 1997; Horne, 2009; Leire & Thidell, 2004; Rex & Baumann, 2007).

There are three types of environmental ISO labels. Type I labels are a third-party certified scheme that is available to firms for several product groups (Kuhre, 1997, p. 45). After passing the application process and fulfilling the standardized criteria, the firm would then be able to display the logo on their certified consumer good. There are also Type I-like labels which focus on a single product category versus multiple in the true Type I ISO certification. The Type II label is a self-declared claim that is often industry specific used to express an environmental claim of the product (Kuhre, 1997, p. 45). An example of a Type II label can be the verifying if tuna is fished in a manner that is safe for dolphins which is reported bottom-up from all stakeholders in the product life cycle, i.e. - the fisherman, the processor, the distributor and the retailer. This is most applicable to the business-to-business sector (Leire & Thidell, 2004, p. 1062). Lastly, the Type III label is a report card formatted quantitative information, for instance nutritional information of food, which adheres to specified ISO methodologies which are based on life cycle assessments (Kuhre, 1997, p. 46).
This thesis defines an eco-label according to the standards that are presented in the ISO Type I certification. This thesis will also include labels that are Type I-like due to their high influence in Sweden which are so highly similar to Type-I labels in these instances. The Type I label is most often identified with the term eco-label and most researched in literature (Horne, 2009, p. 176; Leire & Thidell, 2004, p. 1064; Rex & Baumann, 2007, p. 570). The definition of a Type I certification scheme according to ISO is:

Voluntary, multi-criteria-based third party programme that awards a license which authorizes the user of environmental labels on products indicating overall environmentalpreferability of a productwithin a particular product category based onlife cycle considerations (Kuhre, 1997, p. 45).

The ISO Type I scheme takes the entire life cycle into consideration with its certification standards. It is through this method that the product will be considered in its entire environmental impact versus just focusing on one stage. Therefore, the criteria measure “extraction of resources, manufacturing, distribution, use and disposal relating to relevant cross-media environmental indicators” in order to gain a full understanding of the product’s impact on the environment (Kuhre, 1997, p. 45).

2.3 Eco-labeling certification and actors on the market

To provide a better understanding of the eco-labeling process and how it works on the actual market, a diagram of the three parts involved in the process will be explained below. The purpose of this model is to show that the process of eco-labeling is more complex and also influenced by more participants than in an ordinary consumer good. Normally there is a relationship between producer and customer (including the other parts such as intermediates);
but for this kind of products three main parts are involved, producer, consumer and third party certifying organization. Each part has their own perceptions, objectives and beliefs respect eco-labeling, and it is precisely in the intersection of these three main parts where the eco-labeling process comes together. Every part on the process will be interested on the eco-label for some different reasons, but every part in this process is interested in adopting an eco-label.

**Third party:** When speaking of eco-labeling, a sign or logo that conveys that indicates an environmentally preferable product, service or company that is based on standards or criteria (Ecolabelindex, 2011), it is important to remark that the product has to satisfy certain standards or criteria. When a company wants to include these labels on its products, it is necessary that a third party which is not involved or related with the company, verifies that the product fulfills the requirements and characteristics necessary to be certified. The image and credibility of the third party plays an important role in generating confidence and trust in the claims (Mc Earchen & Mc Clean, 2002 cited in Bashkaran et al, 2006, p.681).

Although is important for the third party to control and promote what the label represents, it is also important to clarify that the higher number of labels in the market is not related with a better understanding of them or a better consumer behavior. For example, Bashkaran et al. (2006, p.681) find that third party accreditation can derive from a variety of sources and the large numbers of accreditation sources can confuse customers and impact the believability of claims.

![Diagram of eco-labeling and the actors on the market](image)

**Producer:** Normally this is The Company in charge of the good or service that wants to meet the standards necessaries to get the certification. For this case a producer can be a manufacturer, a company of services or an intermediary who all have different purposes for
using the eco-label. The purposes to use an eco-label in a product or service can be diverse and the United Nations (UNEP, 2005, p.13) identifies two basic reasons in its environmental program: because it is mandatory or for economic profit. These reasons should be considered for current and future decisions related with marketing strategies or corporate social responsibility, among other areas within a company.

**Customer:** The person who purchases the product or service in order to consume or use it. The reasons why customers choose products with eco-labels are diverse and have been studied by authors as Bashkaran et al. (2006). Some of the reasons are related with sustainability, decreasing the impact on the environment, reducing the carbon footprint, contributing to society, etcetera. At this point, it is important to note that, even though consumers cannot force companies to offer eco-labeled products, a products’ success depends greatly on the final customer and their needs should be kept in mind (UNEP, 2005, p.7).

### 2.4 Eco-labels within Sweden

This study will be focused on eco-labels for everyday consumer goods and food that are available to Swedish individuals at a common supermarket or convenience store. This study does not intend to study household electronics, office or IT products, forestry products, textiles or any other durable product that is generally “used over an extended period of time and that usually survives many uses” (Kotler et al., 2005, p. 540). On the contrary, this research focuses on non-durable goods that are purchased frequently due to the fact that it is a “consumer product that is normally consumed in one or a few uses” (Kotler et al., 2005, p. 540). The Environmental Protection Agency in Sweden is called Konsumentverket and they list the most influential eco-labels used on everyday consumer goods in Sweden on their website (Konsumentverket, 2010). The six eco-labels that they recognize as the most influential in Sweden for non-durable goods can be separated into two categories, general consumer goods including the Swan (Svanen), The Good Environmental Choice (Bra miljöval), and the EU-Ecolabel (referred to previously as the EU flower or EU blomman) and ecological food including Krav, the Marine Stewardship Council (MSC) label and the EU organic farming label (EU:s märkning för ekologiskt jordbruk, often referred to as the EuroLeaf). Since the Swan and EU Eco-labels are both overseen by the same organization, Miljömarkning Sverige AB, which states that they are similar and often synchronized, we have decided to include only one of the eco-labels that they are responsible for (Nordic Eco-label, 2011). We have chosen to include the Swan label since is focused on the Scandinavian market. Also, it is more recognized and has existed longer in Sweden than the EU-Ecolabel (Leire & Thidell, 2005, 1064). We will continue by briefly introducing the five eco-labels that will be included in this research.
2.4.1 The Swan Eco-label (*Svanen*)

The Swan is the official eco-label of the Nordic countries, Sweden, Denmark, Finland, Norway and Iceland. It was founded in 1989 by the Nordic Council of Ministers with the purpose to “provide consumers with a tool (Nordic Eco-label logo) to help them choose among the best, from an environmental standpoint, products on the market” (Nordic Eco-label, 2011a). The Swan eco-label is used to send a message to consumers that the certified product or service is sustainably produced (Nordic Eco-label, 2011a; Personal communication, Nordic Eco-label, 2011). They have a strict standardization process dependent upon the product groups, and there are currently over 2,000 products certified with the Swan label in 63 product groups. It should also be noted that the groups can include services, such as hotels and restaurants. They develop criteria for standardization specifically for the different groups which are revised on a regular basis (often every 3-4 years) and after each revision every product must re-apply for their certification in order to remain certified. The criteria are “developed by using a life cycle perspective” (Nordic Eco-label, 2011a). This means that the product’s impact on the environment is judged from many different angles throughout the products life cycle. This can include but is not limited to: calculating the amount of energy and water that is necessary to produce the product, classifying the type of chemicals that are used to determine if they are harmful or not for the customer, and breaking down the products ability for recycling and disposal (Nordic Eco-label, 2011a).

The Swan eco-label is reported as extremely well-known by Swedish consumers by Miljömarkning Sverige AB with 97% of the Swedish population being aware of and understanding the eco-label’s meaning (Nordic Eco-label, 2011). It is also a very well researched eco-label (Leire & Thidell, 2005, 1064) which signifies to us that it has been a very influential in Sweden.

2.4.2 The Good Environmental Choice Eco-label (*Bra miljöval*)

The Bra Miljöval eco-label began in 1987 as part of the Swedish Society for Nature Conservation [SSNC] and claims that they are the world’s toughest eco-label in terms of strict
criteria and standardization process (SSNC, 2011). The Good Environmental Choice eco-label is used to inform consumers that the product with their logo represents the least harmful product to the environment in their product category (SSNC, 2011; Personal communication, SSNC, 2011). They have a strong history of tackling specific products one by one from their establishment; they started with a focus on removing chlorine from paper products and progressed in the early 1990s with pushing to remove mercury from batteries and harmful chemicals from laundry detergent. Their influence has impacted the Swedish market in terms of increasing the amount of sustainable consumer choices available. For example, they state that over 90% of laundry detergent is now eco-labeled (SSNC, 2011a). Although they are very well known for their impact on the paper industry’s sustainable practices, they certify many products with currently 748 Bra Miljöval products on the market (SSNC, 2011).

The SSNC has a goal of creating a balance between society and nature (SSNC, 2011). The certification process has specific criteria for every product or service that is tightly regulated. Besides the consumer goods that were listed above, services such as household electricity and transport are certifiable. All of these certifiable goods are subject to sampling and yearly auditing by certified reviewers in order to maintain the highest standards. Overall, there is a common goal to conserve natural resources by maintaining the long term approach to production and consumption. Some examples of what is required in order to be certified as a Bra Miljöval product include not containing harmful chemicals, having low carbon emissions, using as little energy as possible in manufacturing and assuming responsibility for products after use.

2.4.3 KRAV

KRAV is an organic food eco-label that was established in Sweden in 1985. They are a key player in Sweden and claim that 98% of Swedish consumers are aware of this eco-label. According to their website, the KRAV eco-label stands for “organic food that is sound, natural environment, solid care for animals, good health and social responsibility” (KRAV, 2010). There are also additional requirements regarding social justice that are required by KRAV which give evidence to the strict regulation that this eco-label maintains. Their main message that they send to consumers is that of organic food that is also socially responsible; some common misconceptions are that the KRAV label does not include this socially responsible criteria or that it certifies cosmetic products (Personal communication, KRAV, 2011). This is an incorporated association with currently 27 members from all areas of the agricultural chain, such as: farmers, processors, consumers, environmental protection agencies and animal welfare organizations. They are interested in the entire lifecycle for product and have a vision where the eco-label promotes “all production and consumption is sustainable and comes from a healthy earth” (KRAV, 2009).

Over 5,500 KRAV certified products are currently available on the market and they are regulated by five certification bodies that do inspections to make sure that the KRAV standards are upheld. The standardization process follows in accordance with the International Federation of Organic Agriculture Movements [IFOAM], an international organization that brings together organizations for certifiers, farmers, scientists and educators to promote
sustainable agricultural practices (KRAV, 2009). KRAV is not only a member of IFOAM but also partakes in standardization development and influencing EU organic production legislation. In order to be KRAV certified the IFOAM Basic Standards and the EU standards for organic production in the regulations (EC) No 834/2007, (EC) No 889/2008 and (EC) No 967/2008 must be adhered to (KRAV, 2009a). Overall, these standards are kept up to date and any changes are published biannually.

2.4.4 Marine Stewardship Council (MSC)

The Marine Stewardship Council [MSC] was established in 1997 in London as a certification program for sustainable fishing. It is a “global organization working with fisheries, seafood companies, scientists, conservation groups and the public to promote the best environmental choice in seafood” with the use of their eco-label (MSC, 2011). They aim to support the world’s oceans through sustainable fishing in order to preserve them for the future, influence consumers to purchase sustainable seafood and collaborate with partners to improve the sustainable fishing market (MSC, 2011a). The main message that they are trying to convey with their eco-label is that of “well managed and sustainable fishing is essential for healthy oceans, livelihoods and economies around the world” (Personal communication, MSC, 2011).

The standardization process was developed by international stakeholders through a two year conference between 1997 and 1999. The standards were based on those already established by the United Nations Food and Agriculture Organization [FAO] Code of Contact for Responsible Fisheries and MSC also adheres to the International Social and Environmental Accreditation and Labeling Alliance [ISEAL] Code of Good Standards (MSC, 2011b). MSC has three general principles that every fishery must meet in order to be certified (MSC, 2011b):

- **Principle 1: Sustainable fish stocks**
  The fishing activity must be at a level which is sustainable for the fish population. Any certified fishery must operate so that fishing can continue indefinitely and is not overexploiting the resources.

- **Principle 2: Minimizing environmental impact**
  Fishing operations should be managed to maintain the structure, productivity, function and diversity of the ecosystem on which the fishery depends.

- **Principle 3: Effective management**
  The fishery must meet all local, national and international laws and must have a management system in place to respond to changing circumstances and maintain sustainability.

There are 31 much more extensively detailed criteria that must be fulfilled in order to become certified which can be downloaded from their website (MSC, 2011b). All of these criteria as assessed by a certified third-party at Accreditation Services International GmbH [ASI] and pertain to only natural fish in the ocean and not farmed fish. Two common misconceptions
regarding the MSC eco-label is that they certify farmed fish or that the logo represents sea food that was fished in the EU (Personal communication, MSC, 2011).

2.4.5 EU organic farming eco-label (*EU:s märkning för ekologiskt jordbruk*, often referred to as the Euro-Leaf)

The EU organic farming eco-label was founded in the end of the 1990s to represent organic farming in the European Union [EU] and the Old Logo presented above was used on a voluntary basis. The logo has recently undergone a revision on July 1st 2010 and is now represented as the leaf symbol and is often referred to as the Euro-Leaf (European Commission, 2010, p. 1). The Old Logo may still be present in the market due to its processing through the supply chain but it should not be used on any new products entering the market. In 2007, all Member States in the EU voted that the EU organic farming logo will be compulsory for all organic pre-packaged food products within the EU and continue to be voluntary for all non pre-packaged organic goods or any products imported from outside countries (European Commission, 2011a). The redesign was held as a design competition where any art and design student within the EU could participate. The Euro-Leaf, created by German design student Dušan Milenković, was then chosen after gaining 63% of the total votes as the New EU organic farming logo.

The Euro-Leaf aims to “offer consumers’ confidence about the origins and qualities of their food and drink and its presence on any product ensures compliance with the EU organic farming Regulation” (European Commission, 2011). Certification from this label follows the European legislation is the Commission Regulation (EC) No 889/2008 and the Commission Regulation (EU) No 271/2010 of 24 March 2010 (European Commission, 2010, p. 1). A detailed user’s manual has been created by the European Commission’s Directorate-General for Agriculture and Rural Development which details the qualification and certification procedure for farmers (European Commission, 2011). Their website also offers a more general explanation for what cannot be labeled with the Euro-Leaf. Products that fulfill any of the following criteria are not able to be certified by the Euro-Leaf (European Commission, 2010, p. 2):

- *That are not in scope of the EU organic legislation such as products of hunting and fishing of wild animals, cosmetics, textiles,*
- *Containing less than 95% of organic ingredients;*
- *That are in conversion to organic,*
- *For which only national rules are defined*
For example, sardines cannot be labeled with the Euro-Leaf if only the olive oil that they are packaged in is organic but organic salmon can bear the label. The ISO code number and the place that the product was farmed must also be present with the logo in order to inform the consumers as much as possible.

2.5 The Eco-label adoption process

The eco-label adoption process presented by Thørgesen et al. (2010, p. 1790) presents a linear process of adopting green behavior through the use of any eco-label, such as those listed above. The process begins with exposure to the eco-label itself and then the action is transferred to the consumer’s perception, understanding and liking which directly influences their adoption and continued adoption. This model is reflective of a rational and extended problem solving method for a consumer to make decisions. The consumer completes an information search in order to make their purchases and considers the attributes of each brand when making their purchase decision (Solomon et al., 2010, p. 319). As shown in the eco-label adoption process model below in Figure 4, the consumer must be aware of and understand which products are more sustainable in order to adopt green choices.

Although the process is presented in a linear model, there are outside factors that can influence the consumer’s decision to purchase a specific eco-label or not. Environmental, personal and product related factors all influence the consumer when deciding to adopt a green behavior to purchase an eco-labeled product. Previous research has indicated that there is a gap between concern for the environment and actual purchase behavior (Peattie & Crane, 2005, p. 359; Wong, Turner & Stoneman, 1996, p. 46-47). These findings fall in line with the disruption of the purely rational eco-label adoption by outside factors as presented in this model. There are a multitude of possibilities that these factors could be considered since all situations, people and products can be different. Therefore, this study will focus on those factors which are most discussed in the literature as reviewed in this report.

Environmental factors, such as the current trend for green consumerism have impacted eco-label adoption. Consumers are now interested in the environmental impacts of the products they buy in addition to price, delivery and quality. This new environmental consciousness is affecting the marketplace and has resulted in a plethora of environmental marketing claims, some valid and some not (Wynne, 1994, p. 51; Kuhre, 1997, p. 4). In fact, there have been so many companies making green claims that the consumer can be confused and distrustful (Peattie & Crane, 2005, p. 361-362; Kuhre, 1997, p. 6). Also, invalid green marketing claims have “lead to mounting consumer cynicism and suspicion” which has influenced sales of eco-labeled products (Peattie & Crane, 2005, p. 361). The high amount of eco-labels and the confusion they create when trying to differentiate them from other non-certified labels have made it difficult for consumers to understand and later purchase green products (Horne, 2009, p. 179; Liere & Thidell, 2005, p. 1064). This overload of eco-labels on the market has manifested into consumer’s stating that the “lack of adequate information” is a significant factor hindering green purchasing (Liere & Thidell, 2005, p. 1062). In other words, consumers express a need for more understandable and trustworthy information versus the cluttered scenario that currently exists on the market. These findings indicate that if the consumer feels it is a complicated process when choosing an eco-label or that there are too many eco-labels on the market, their eco-label purchase behavior will be affected.
The consumer’s personal factors, for example their personal attitudes towards sustainable practices and/or their personal demographics, can also affect their green purchasing behavior. Liere & Thidell report that “consumers in the Nordic countries are generally aware of the fact that products are associated with complex environmental problems” (Liere & Thidell, 2005, p. 1062). They have knowledge of their impact their purchases have on the environment due to the fact that they have been exposed to eco-labels and lists of sustainable options have been readily available to them even before the green movement became trendy. This has lead to a high occurrence of environmentally friendly beliefs and pro-environmental attitudes which have been shown to be motivators in the green purchasing behavior (Horne, 2009, p. 180; Liere & Thidell, 2005, p. 1068). However, equally important is their ability to understand and infer the message that the eco-label is representing. Misunderstanding the meaning of the certification could severely hinder the consumer’s decision to accept and adopt the green product. In fact, the confusion related to the eco-label could deter the consumer from liking and later adopting the eco-label (Peattie & Crane, 2005, p. 361-362). Overall, these findings suggest that demographic characteristics, environmentally friendly beliefs, pro-environmental attitudes and understanding of the eco-label can affect a consumer’s green purchasing behavior.

Finally, the consumer’s decision to purchase an eco-labeled product is based on product related factors. This can include any type of information that is present on the product that the consumer takes in account when making their purchase decision, such as: the eco-label’s logo itself or information regarding the certifying body which can be used to increase credibility. If the information is hard to find or understand, the consumer will pay little attention to it and this is problematic (Kuhre, 1997, p.6). Their ability to perceive the eco-label is paramount, since if they are not aware of the label they will not be able to move forward in the adoption process. Another notable product characteristic that impacts eco-label adoption is price. Perceiving that eco-labeled products are too expensive can highly influence the consumer’s green purchasing habits (Liere & Thidell, 2005, p. 1065; Horne, 2009, p. 179). In summary, if consumers perceive that eco-labeled products are not available to them or that they are priced too high their green purchase behavior will be affected.
2.6 The ISO 14063 standard for environmental communication

Before the ISO 14000 series, there has been a lack of coordinated efforts to standardize environmental communication, especially with eco-labeling, which has lead to confusion in the market regarding sustainable products (Kuhre, 1997, p. 5). The fact that there are so many certifying bodies with such different regulations has lead to a higher misunderstanding of the labels (Liere & Thidell, 2005, p. 1065). To prevent this, the ISO 14000 series was created to guide any environmental management system in either internal or external areas of the organization. The series structures are all based upon the general strategy that all the standardization processes follow: plan, implement, follow up and improve (Swedish Standards Institute [SIS], 2005).

In 2004, ISO introduced a method for environmental communication that can be adopted by any organization internally or externally within this series under the number of ISO 14063 (ISO, 2004 cited in Von Ahn, & Wikström, 2005, p. 33). Environmental communication is understood in this report as a “process that an organization conducts to provide and obtain information and to engage in dialogue with internal and external interested parties to encourage a shared understanding on environmental issues, aspects and performance” (ISO 14063, 2004 cited in Strömdahl, 2005, p. 13). An interested party can be defined as a “person or group concerned with or affected by the environmental performance of an organization” (ISO 14001, 2004 cited in Strömdahl, 2005, p. 13). By applying the structure that the ISO 14063, a firm or organization can implement an environmental communication policy with interested parties or promote information about its environmental performance. We have chosen to include the ISO standardization since the development of its guidelines is monitored by third party organizations, for example the World Wide Fund for Nature (Kuhre, 1997, p. 26), and they also because they can be applied to an international setting.
Applying this strategy can lay the groundwork for a highly effective communication plan for an eco-label certifying organization. For example, the organization can plan a specific message to be communicated to the target audience, implement this by campaigns that promote the eco-label and spread its message, follow up with research to determine if the message is clear and effective and finally improve on the areas that could be improved by the research results. Within this model there are five main principles that are recommended to be the focus of an environmental communication strategy (ISO 14063, 2004 cited in Strömdahl, 2005, p. 15; Von Ahn & Wikström, 2005, p. 33-34):

1. **Transparency** – all information should be easily available to all stakeholders regarding the Eco-labels certification process and all communication methods.

2. **Appropriateness** – the information offered should be relevant for all stakeholders and easily usable.

3. **Credibility** – the information should be communicated so that the stakeholders can trust the organization.

4. **Responsiveness** – the information should be readily available and offered in a timely manner.

5. **Clarity** – all information should be easily understood.

We will utilize the ISO 14063 guide for environmental communication to study the eco-label’s message quality influence on the consumer’s ability to understand and adopt the message. This guidebook offers several principles which the certifying organization of the eco-label should aim to follow in order to convey a message through their eco-label to the consumers: Transparency, Appropriateness, Credibility, Responsiveness and Clarity. These principles will be used as a guide for this study as a representation of message quality of the
eco-label. By studying them we aim to determine if these message quality principles are related to understanding the eco-label’s message and adoption.

2.7 Summary of theoretical framework

After reviewing the theory behind eco-labeling, it is evident that the eco-label adoption process is complex. With the increased use and prevalence of eco-labels in the world it can be argued that understanding the message that is being sent by the organizations through the labels can be difficult to understand. Relating this back to the Kotler communication model (2009, p.539), we argue that noise may be a decisive factor which influences the ability for consumers to understand the message and consequently adopt the eco-label. The noise can manifest itself in a myriad of ways but this research focuses on the findings from our literature review as the basis for this study, specifically: perceived difficulty in understanding eco-labels, perceived eco-label overload, pro-environmental attitude, belief in environmentally friendly behavior, availability, price sensitivity and consumer demographics.

We also argue that the quality of the message itself can influence the consumers’ ability to understand it. In order to study the quality of the message the ISO 14063 will be utilized as a guideline for sending a highly understandable and effective message. By comparing the quality of the sender’s message, or eco-label certifying organization, to the receiver’s, or consumers, ability to understand it, we aim to gain insight into the process of communicating a message through eco-labels. We hope to find relationships between outside factors, or noise, and the ability for the consumers to be aware of, understand and adopt the eco-label. The following figure illustrates the integration of this research with the theories presented in this chapter.

Figure 6: Conceptual Framework
Source: Researchers elaboration in relation to Kotler (2009, p.539), Pelsmacker (2010, p.4) and Thørgesen et al. (2010, p. 1790)
The conceptual framework presented for this research shown above provides an explanation of the eco-label market and relates the different theories explained in this chapter, in order to situate them in the frame of this study and provide a better understanding for the readers. The figure is an adaptation of the model of communications of Kotler (2009, p.539). The first part in the process of communication is the sender; this will create and encode the message. Researchers have identified the Third party in charge of the eco-label as the sender of the message (the different actors in the eco-label process have been identified in section 2.3). The next and main element in this model and also in this study is the message; the message represents all the values and elements that and eco-label has. The sender will send and communicate the message using different tools of the mix of communications such as promotions, public relations or advertising. Afterwards, the receiver will decode and interpret the message. The receiver in this study can be either the company who wants to use the eco-labels for their products or the customers who wants to purchase those products. Once the message has been received, the eco-label adoption process (Thørgesen et al. 2010, p. 1790) comes into play in relation with the different factors present on the eco-label process. The last on the principal elements in this process is the noise factor; in the figure some examples of what could be noise are shown, even if this study will try to identify those factors. Finally, receivers will have a response that will be transformed into feedback and information for the sender.
Chapter 3: Theoretical Methodology

The aim of this chapter is to consider and discuss the different philosophies, approaches and strategies that can be used in order to conduct this study and how these methods can be integrated in the field of eco-labeling and the possible problems of communication within the Swedish market. There are several and they all have different functions on the academic field, making it important to clarify and provide a deep explanation of them. Afterwards, an election will be made among these alternatives and the research method for the study will be explained together with arguments and critiques to these approaches in order to develop this research. On the last part the limitations of these models will be discussed.

The literature used in this chapter is the product of some comparisons among authors in this field and also with different perspectives. Several authors and other references have been considered and two main references will be the foundation of this chapter: the first reference is from Bryman & Bell (2007) “Business research methods” and the second one is Saunders, Lewis & Thornhill (2009) “Research methods for business”. The reasons to use these two references for this chapter specially is that both books are being used as a main textbook in most universities and business schools, they are specific on the methodology for business purposes and also they have both been used for previous studies and thesis writing. For the case of Bryman and Bell, this book is the one used in research methodology at Umeå School of business. Also important to consider is that the different theories and methods applied in this study are not experimental or researchers do not intend to present new definitions or methods that could required some other references as if for example the case of abduction as an approach or realism as philosophy should be applied. To conclude this discussion, researchers admit that these two authors are not the only ones on this field but some comparison with revision of previous literature shows that the concepts explained are relatively similar concerning definitions and use of them for business purposes.

3.1 Research process

In order to provide a better understanding, the next figure shows the process that will be followed for the main structure of this chapter. The model is called “the research onion” and has been created by Sanders et al (2009, p.108). The structure of the chapter will start from the external phases (Philosophy) to the core of the model (data collection and analysis).
3.2 Research philosophy

Saunders et al. defines research philosophy as “a term related to the development of knowledge and the nature of that knowledge in relation to research” (2009, p. 600). In other words, when conducting research the researcher is developing new knowledge in a specific field. It is important to understand the philosophy because it contains important assumptions about the way in which a person views the world (Saunders et al., 2009 p.108). The adopted research philosophy can elucidate which research design is most appropriate for a specific study and our decisions related to how to gather and analyze data will stem from this (Easterby-Smith, Thorpe & Lowe, 2002, p. 27). The figure 8 can help to understand the different research philosophies:
The first philosophy to consider is related with the epistemological considerations. The epistemological issue is related with what should be acceptable knowledge on a certain area or discipline (Bryman & Bell, 2007, p.16). The epistemological considerations could be divided into three different categories: positivism, interpretivism and realism.

**Positivism** advocates the application of the methods of the natural sciences to the study of social reliability and beyond. In other words, positivism emphasizes the importance of imitating the natural sciences process when conducting a research (Bryman & Bell, 2007, p.16). It includes the following principles: only phenomena and hence knowledge confirmed by the senses can genuinely be warranted as knowledge, the purpose of positivism is to generate hypothesis that can be tested and will allow explanations of laws to be assessed, science must be conducted in a way that is objective and it also implies that knowledge is based on the analysis of facts. This research aims to imitate the natural science approach by generating hypotheses from theories that can be tested in an objective manner. In this way, our research follows the positivist epistemological considerations.

The second doctrine on epistemological considerations is known as **interpretivism** and is a concept completely opposed to positivism. Interpretivism considers that the matter of social sciences is different from the one of natural sciences in that reality is determined by people versus observable factors that exist externally in nature; consequently, it should follow a different research procedure (Bryman & Bell, 2007, p.17, Easterby-Smith et al., 2002, p. 30). Saunders et al. (2009, p.116) considers that interpretivism also advocates that the researcher needs to understand the difference between humans in the role of social actors and also argue that individuals and groups develop their situations using the knowledge acquired with previous experiences and memories. The interpretivism approach does not match all the characteristics needed for this study because even if in this study people will be asked about different questions, we do not consider they play a role of “actors” in the process of purchasing products that are environmental friendly. The last consideration on epistemology is **realism**. Realism shares certain features with positivism as is, the belief that natural and
social sciences should apply the same approach on the research process; and also, reality occurs separately from our descriptions of it (Bryman & Bell, 2007, p.18).

The different philosophies have been explained above; they show different positions and can be applied in different scenarios, but for this research the one that will be utilized is the *positivism philosophy*. This stance views the social world as something that exists external of human interactions and therefore can be measured objectively (Easterby-Smith et al., 2002, p. 28; Alvesson & Sköldberg, 2009, p. 17). According to the definition made by Bryman & Bell (2007, p.18), positivism “must be conducted in a way that is objective and it also implies that knowledge is based on the analysis of facts.” It is apparent that a key to positivism is objectivity which is the perspective that has been adopted for this research. This research aims to analyze responses from participants regarding the eco-label market. The role of researchers for this study is limited and the findings obtained will be the outcome of observing a process and analyzing the facts. At any time of the investigation the researcher will remain impartial and should not have an influence on how the study is carried out, nor will give their opinion in the process.

The second aspect to consider on research philosophy is the *ontological* aspect, related with the nature of social sciences (Bryman & Bell, 2007, p.22) and the establishment of concepts that “identify basic features of the social world” (Blaikie, 2004, p. 130-131). In other words, ontology deals with the intervention of social actors and whether they participate or have a role in the research process or not. The ontological considerations are objectivism and constructionism (also defined by other authors as subjectivism). **Objectivism** asserts that social phenomena and their meanings have an existence that is independent of social actors (Bryman & Bell, 2007, p.22; Easterby-Smith et al., 2002, p. 28). This position states that social phenomena are external occur despite the participation of individuals or groups. The other position which also is the opposite definition is **constructionism or subjectivism** and states that social phenomena occur due to action of social actors (Saunders et al., 2009, p.111; Alvesson & Sköldberg, 2009, p. 23-24). In order to choose one approach the researcher needs to identify in which degree the research is influenced by social actors. As discussed before, the purpose of this research is to study and analyze the characteristics of the eco-label market in a determined area and in consideration; the role of “social actors” is limited. Although a survey will be distributed and responses of individuals will be analyzed, the participants have a limited role on the research process and do not act as active actors, but they do as members of the sample required in order to make inferences and generalize results. Respondents will answer questions and also show some attitudes and behavior. They act as “actors” when making daily decision among alternatives and different products on the market, but not in this research. Furthermore, the researchers will maintain an impartial stance when conducting this research. In this way, social phenomena can be viewed from an unbiased position. These are the main reasons which lead the researchers of this project to choose an ontological approach based on an objectivist philosophy.

### 3.3 Research approach

According to Bryman & Bell (2007, p.11) and Saunders et al. (2009, p.126), the research approach can be classified into deductive or inductive. It is important to choose an approach because it will enable us to make more informed decisions about the research design. The research approach will guide us in choosing strategies that will work for this study, rejecting those that will not and allowing us to adapt the research design to cater for constraints (Easterby-Smith et al., 2008 cited in Saunders et al., 2009, p.126).
These two approaches represent different steps and procedures and for this reason, the strengths and weaknesses of every method will be analyzed and discuss, following with the choice of approach for this thesis and a discussion of the approach chosen. The first approach on business research is the **deductive approach**, which implies the process of formulating a hypothesis and deducing through observations if we, as researchers, are able to accept or reject it (Easterby-Smith et al., 2002, p. 28; Blaikie, 2004, p. 105). The deductive process involves 4 steps explained on Figure 9 below. In this approach the researcher goes from general to particular: starting from an existing theory the researcher will observe the reality and will deduce a hypothesis, this implies to be able to translate it into operational terms by collecting data in order to make inferences and arrive to a specific finding by accepting or rejecting the hypothesis (Bryman & Bell, 2007, p.11). Normally a deductive approach will need a higher amount of data in order to fulfill the criteria of reliability or validity and also this amount of data will be required in order to generalize the results of the hypothesis tested to a higher or bigger population. To achieve this goal, a deductive approach will include the use of statistical methods and the analysis of data on a way that can be aggregated (Bryman & Bell, 2007, p.11).

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<tr>
<th>Deductive approach</th>
<th>Inductive approach</th>
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<td>Hypothesis</td>
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<td>Observation</td>
<td>Tentative Hypothesis</td>
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<td>Confirmation</td>
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*Figure 9: Deductive versus Inductive approach (Adapted from Trochim, 2006)*

The other approach that can be conducted on a study is the **inductive approach**, which is the opposite process to deductive approach. Theory is the outcome of research, which means that the researcher will depart first from a specific theme or case and will infer a theory from that particular observation in an attempt to explain a phenomenon (Bryman & Bell, 2007, p.146 Alvesson & Sköldberg, 2009, p. 3). Figure 9 above also shows the steps involved on an inductive approach. A researcher conducting and inductive approach will be more willing to work with qualitative data and use a variety of methods to collect these data in order to
establish different views of phenomena (Easterby-Smith et al., 2008 cited in Saunders et al., 2009, p.126).

The differences between both approaches are more than the steps involved. There is a tendency to relate deductive approach with a scientific research because to develop a theory this one subjected to an empirical scrutiny (Bryman & Bell, 2007, p.11). Also deductive approach is the dominant one on natural sciences where laws present the basis of explanation, allow the anticipation of phenomena, predict their occurrence and permit them to be controlled (Collis and Hussey 2003, cited in Saunders et al., 2009, p.124) and for this relation with the scientific process deduction has also been criticized due to its tendency to construct a rigid methodology that does not permit alternative explanations of what’s going on.

As shown before, there are different perspectives on the different research approaches and for both of them arguments has been made in favor and against. To choose among the different alternatives is not easy, and every approach taken can be correct. The purpose of this research is to arrive to a conclusion based on the study of hypothesis and to find variation among respondents. For the case of the marketing of eco-labels, we will depart from a model of theory, as presented in chapter 2 of this report, and according to these findings a hypothesis will be establish. The hypothesis will then be accepted or rejected according to observation and data collection (semi-structured interviews and surveys) and finally and analysis and a confirmation of the hypothesis will be the outcome of the study. Theories that already exist and have been used in previous studies have been discussed in Chapter 2 and is not the objective of this study to generate a theory from a specific finding, but on the contrary, to find results than can be derived and complemented with previous research on the field of marketing communication and eco-labeling. For the reasons explained above and in previous paragraphs, the structure of this research suggests that a deductive approach is being utilized and the steps involved in this approach better fulfill the research criteria and the structure of this research.

3.4 Research strategy

The research strategies that can be used when conducting an academic business research are diverse, and among the different alternatives we will proceed to explain and discuss those strategies that are relevant for this study. The first strategy to consider is the cross-sectional research design, or “the collection of data on more than one case and at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variables, which are then examined to detect patterns of association” (Bryman & Bell, 2007, p.55). The reasons to choose this design are several, starting with the study of more than one case, which means that a high number of cases can be used in order to generalize and find variations between variables. Another aspect to note is that cross-sectional design is based on the positivist traditions and is preferably conducted with quantitative data which can be submitted and analyzed through a standardized procedure that will allow the researcher to make comparison among variables (Bryman & Bell, 2007, p.55; Easterby-Smith et al., 2002, p. 28). In this study, the objective is to find out if customers understand the message of eco-labeling and if this message is consistent for them. In order to generalize results and relate them to the intended population (market where a high percentage of the population is involved) a high amount of responses will be gathered that can be computed and analyzed together. Furthermore, the topic of interest, eco-labels will be taken from a wide enough sample or eco-label certifying organizations from within Sweden as possible. By including
five eco-labels, we aim to be able to generalize our results to eco-labels within the market of Sweden. Furthermore, by confirming the message of the certifying organization of the eco-labels, we will be able to gain an insight into how the message from the sender compares to that of the receiver, the consumer.

The concept of cross-sectional design is related to the strategy that is going to be used on this research, but a more specific concept fits this study best: the **survey research**, a cross-sectional design in relation to which data are collected predominantly by questionnaire or by structured interview on more than one case and also in time to connect the data with two or more variables in order to compare them or find patterns of association (Bryman & Bell, 2007, p.56). The survey research is the strategy that will be used on this study because the objective is to collect information from customers who purchase consumer goods within the Swedish market. Also, a survey will be used to ask their opinion about eco-labeling and purchasing behavior. This survey will help researchers to submit and compare the data according to a standardized procedure with statistical analysis; for this case the tool used will be the program SPSS, that will be discussed further on.

### 3.4.1 Questionnaire

The questionnaire is a self-administered questionnaire where respondents are able to answer questions and complete the questionnaire themselves. A questionnaire can be presented in several forms: by mail, where the questionnaire is sent to respondent’s mailbox and also to handed out in certain locations or to certain groups (Bryman & Bell, 2007, p.240). For this study, the questionnaire has been handed out to participants to expedite the process. Language was taken into consideration and both English and Swedish versions were available to participants (See Appendix 1 & 2).

In order to create the questionnaire, a semi-structured interview was completed to confirm the message of the eco-label certifying organization and remove as much researcher bias as possible. This was completed in the form of a semi-structured interview which included a list of intended questions but the respondent has a great deal of leeway on how they choose to reply (Bryman & bell, 2007, p.240; See Appendix 3). These interviews were utilized to gather information regarding the message of the eco-labels and how it is sent. This was completed prior to the beginning of the research of consumers to increase the validity of the questionnaire since it is the main method of measuring data in the study.

### 3.4.2 Sampling

A convenience sampling method was used in this study, the one that is simply available to the researcher by virtue of its accessibility. There has been discussion concerning whether convenience sampling should be used in quantitative research and also on the advantages and disadvantages of this method. One of the main arguments against is that it can be hard for the researcher to generalize the findings, since it might be difficult to know of what population the sample is representative (Bryman & Bell, 2007, p.198). Although there are disadvantages to convenience sampling, we have adopted this sampling method due to the time and cost constraints placed on us as Master’s students finishing a 15 point thesis. Conducting a proper random sampling approach was out of the time span of this ten week course and would have been too costly.
Despite the application of a convenience sample, attempts were made to make the sample of this research as representative of the population as possible under these restrictions. Since the objective of this study is to analyze the Swedish market, the survey will be distributed in several supermarkets in the Umeå region over the course of several days, where the consumer goods and eco-labeled products are bought. Furthermore, by conducting the survey outside of the Umeå University campus, we hoped to include other demographic groups in our study other than just students.

3.4.3 Literature search

When conducting the literature search for this research, efforts were made to ensure the credibility of the sources. The focus on the search is based on peer reviewed articles from established journals and also course textbooks from our bachelor and master's studies. By using these types of references in every case possible, we hoped to increase the quality of our information. Secondary sources were used from these peer reviewed articles and textbooks when necessary. We aimed to use primary sources as much as possible but we were not always able to gain access to primary sources. For example, we were not able to gain access to the ISO 14063 environmental communication standards through an inter-library loan. We used two secondary sources in this instance to cross check the information gathered even though we were not able to gain the primary source. We recognize that this is not the ideal method for gathering information and may have caused limitations in our research; however, this book was not easily available to us. Lastly, web-based sources were utilized only when the required information was relevant for our study and current. For example, the information regarding the certifying organizations of the eco-labels was gathered from their websites so we would be able to learn as much from the organization’s point of view as possible.

3.5 Authors’ preconceptions

We acknowledge that the background and preconceptions of the researchers can influence the choice of topic and approach that has been applied to this study. This is a very brief introduction to the Authors’ backgrounds and experiences:

- **Annie Lefébure:** She is currently an International Business Program student at the Umeå school of Business completing her Master’s (1 year) this summer. Born in the United States, she has also completed a Bachelor of Arts in Psychology with a minor in Biology at Loyola University, Maryland. Her study abroad experiences include a term at Stirling University, Scotland and a term in Copenhagen Business School, Denmark. Growing up in a small rural town in Pennsylvania has made nature a focal point in her life and she has always appreciated mucking about in it.

- **Rafael Rosales Muñoz:** Born in Spain 23 years ago and a current student of Umeå Business School under the Erasmus program. Before that he got a diploma on business sciences and after that started his bachelor degree in research and marketing techniques, emphasizing in the field of communication. After studied marketing management in South Korea (Summer 2009) he got a job as marketing responsible of communications for Sojo Group (from September 2009 to June 2010) and as part of his bachelor studies he wrote an essay based on the ecological and environmental friendly products in the Spanish market: specifically for the region of Córdoba (South of Spain).
Chapter 4: Practical Methodology

The purpose of this chapter is to explain the specific methods and techniques that have been used on this study, in order to provide a better understanding together with the theoretical methodology on how the research process has been followed. Also, the aspects related with reliability and validity will be discussed, together with the reasons and arguments related to sample, techniques and the quality of this study.

4.1 Applying the quantitative approach

Before explaining how the questionnaire has been designed and also how data have been collected, it is important to go back to the initial step about the purpose of this study, which is related with analyzing the message that eco-label represents and how customers understand it. Even if this study aims on analyzing the consumer side, it was important to verify the message of the different eco-labels in this study. After confirming this message, we were then able to create our questionnaire which was distributed to consumers in the Umeå region. This process will help us understand the entire message communication process from sender to receiver for an eco-label. For these reasons, two different steps were necessary in order to complete this research:

1. A semi-structured interview with representatives working on the different eco-labels that are present on the Swedish market.
2. A questionnaire distributed to the inhabitants of Umeå in different supermarkets of the city.

4.2 Confirming the Sender’s message

In order to understand the Sender’s message we conducted a semi-structured interview with four out of the five eco-label organizations included in this research. We encountered difficulties with accessibility in contacting the fifth eco-label organization, the EU-Leaf; however, their website provided information we needed in order to complete our questionnaire. Conducting a semi-structured interview for the other four eco-label organizations was necessary to understand the “Service-provider” side, in this case the third party that is in charge of protect the eco-label. This guarantees that we understand the message from the eco-label organizations perspective. We can then ensure that the questionnaire will include the correct information used to determine if the message is communicated and understood by the customers. Another reason to choose this technique is related with the ISO 14063 environmental communication process (2004 cited in Strömdahl, 2005, p. 15; Von Ahn & Wikström, 2005, p. 33-34) and the criteria of transparency (explained in chapter 2). According to this standard, the organizations have to give access to and provide information that is understandable by their customers. We use this technique of the semi-structured interview as a cross-check method to assure that there is consistency between their message and their actions.

In line with the process of a semi-structured interview, a template of questions was created in order to learn more about the process of how a message is sent by an eco-label and what they intend to transmit to the consumers. By completing this step we were able to gather a better understanding of the process of transmitting a message and found that several of the eco-
labels used the same methods in the communication mix: XXXXXXX (Personal communication MSC, 2011; Personal communication KRAV, 2011; Personal Communication, Swan, 2011; Personal Communication Bra Miljöval, 2011). The final questionnaire included a question which checked if the respondent understood the message of the eco-label or not. It was a multiple choice question which offered five options: one correct answer, two incorrect answers, the option to choose they did not know the message and the option to choose that they have never seen the eco-label before. In the semi-structured interview, the eco-label organizations were requested to specify what the main message they are trying to convey with their eco-label. This answer was then deemed the correct answer in our questionnaire when we asked the respondents to choose which answer best describes the eco-labels (See Appendix 1 & 2, Section 1). Also, we asked the eco-label organizations if there were any common misconceptions regarding the eco-labels they represent. These answers were utilized in the creation of the questionnaire as well; they were also included as the incorrect responses when asking the respondents to choose the correct answer from multiple choice options. Furthermore, the eco-label organizations stated that they feel that there are too many eco-labels on the market creating confusion for the consumer (Personal communication MSC, 2011; Personal communication KRAV, 2011; Personal Communication, Swan, 2011; Personal Communication Bra Miljöval, 2011). This confirmed our findings from our literature review (Horne, 2009, p. 179; Liere & Thidell, 2005, p. 1064) and choice to include the question regarding eco-label overload in the marketplace (See Appendix 1 & 2, Section 2, question 6).

Although different reasons and objectives of the semi-structured interview have been discussed, the last and most important is that by using this technique it is possible to remove as much bias as possible from the questionnaire. The main finding of the semi-structured interview was to confirm the intended message from the eco-label organizations so that the questionnaire contained the most accurate questions as possible. In this way the semi-structured interview’s results were applied in order to increase the validity of the results of the questionnaire and the study overall. Even though not all of the information gathered from the semi-structured interviews was utilized, it gave us as researchers the base we needed in order to create the main measurement tool of this study, the questionnaire, and compare the eco-labels message from both before and after it was transmitted.

The method of collection of the semi-structured interviews varied between both synchronous and asynchrononous. Bryman and Bell differentiate these two different approaches for gathering data via a semi-structured interview where synchronous occurs in “real-time” and asynchrononous does not (2007, p. 665). This distinction refers to the interviewer’s ability to interact directly with the interviewee or not. Asynchrononous communication can further be defined as “communication that takes place at different times, for example, e-mail communication which is not simultaneous and does not require users to be on-line at the same time” (Becker & Bryman, 2004, p. 388). Our aim was to conduct the semi-structured interview by e-mail (See Appendix 3 for interview questions) so the eco-label organizations could reply at their convenience; however, we received only two replies by e-mail, one from MSC and one from KRAV, even after two follow-up phone calls requesting for it to be completed (Personal Communication, MSC, 2011; Personal Communication, KRAV, 2011). After contacting the organizations via phone on two occasions it became apparent that both the Swan and Bra Miljöval eco-labels felt it would be more convenient to answer the questions directly over the phone. Because of their preferences and our need to complete these interviews in order to finish the questionnaire and consequently the study in time, we completed two of the semi-structured interviews over the telephone (Personal
Communication, Swan, 2011; Personal Communication, Bra Miljöval, 2011). Only one of the eco-labels did not participate in the semi-structured interview, the EU-Leaf. This organization does not have any phone number or email contact information on their webpage. If someone wishes to contact the company, the only way possible is by filling a request form with personal data. In spite of the lack in contact details, the information found on the Euro-Leaf’s webpage was very succinct and thorough (European Commission, 2011; European Commission, 2011a). Also, they offer a informational handout for the eco-label and frequently asked questions related to it (European Commission, 2010). In this instance, we felt that the information offered on their website was sufficient to complete the questions related to message of the label.

The mix of methods in collecting the responses for the semi-structured interview was not intentional and would have been avoided if more time was available. Nonetheless, it has been noted that interviews can be completed in several different methods, synchronous or asynchronous, and via several different mediums, on-line, by telephone or in person (Bryman & Bell, 2007; Becker & Bryman, 2004). Given that we needed to expedite time in order to design our questionnaire and that the methods of collection are accepted by several authors, we feel that the semi-structured interview was applied in an acceptable manner for this study.

4.3 Questionnaire design and coding

For the processing of data, the statistical program Statistical Package for the Social Sciences (SPSS) has been used. This program allows submitting high amount of similar responses and making inferences and comparisons among responses and variables. Frequencies were computed in order to gain descriptive statistics. Also, independent sample t-tests and contingency tables were computed in order to gain inferential statistics.

To create the questionnaire, the information obtained from the semi-structured interviews of different companies’ representatives has been processed, used and complemented with the information from the Handbook of Marketing Scales (Bearden & Netemeyer, 1999, p.129-131, p. 180-182, p. 234-235, p. 271-273). These two sources have been helpful in order to: on the one side, provide a questionnaire that is reliable, updated and in congruence with some experts and on the other side, to assure that the questions made really measure what is expected and the bias made by researcher can be reduced to minimum. The survey has been structured in four sections that are related with different fields on the study at the same time that make the process of complete the questionnaire easier for the respondents.
The first section is related with the awareness and understanding (clarity) of the labels which are going to be asked. The respondents can choose among five alternatives related to the eco-label message: two options are incorrect messages, one option is correct. Of the other two options, one is stated as “don’t know” in order to assure that respondent is not forced to guess the meaning when they truly do not know it. And the last one is stated as “I haven’t seen this label before” to find out if they are aware of the labels in the market. For the coding of these responses, 2 variables have been created:

- **Variable #1:** Understanding of the concept, where three different options are computed (0=Do not understand, 1=Understand, 2=Do not know). Only respondents who chose the correct answer were labeled as understanding the message of the eco-label. If they chose either of the incorrect answers they were labeled as not understanding the message. If they marked that they did not know or indicated that they have never seen the eco-label before, they were labeled as not knowing the answer.

- **Variable #2:** Awareness of the eco-labels within the Swedish market. To compute this variable the values are 1=Aware of the label, 0=Unaware of the label. If the respondents answered this question with choosing I have not seen this eco-label before, they were labeled as being Unaware of the eco-label. If they choose any other answer besides I have not seen this eco-label, they were assumed to be aware of the eco-label and deemed Aware.
The second section relates other factors outside of the message and awareness that can influence adopting Eco-labeling which were discussed in the theory section. This section is divided into eight questions which have been formulating as Likert scale statements, which can be answered in a range from 1 to 5, where 1 means “strongly disagree” and 5 means “strongly agree”. The questions are related to different areas of research which are defined below:

- Questions 1 and 2: Pro-Environmental Attitude
- Questions 3 and 4: Belief in Environmentally friendly behavior
- Question 5: Perceived difficulty in understanding Eco-labels
- Question 6: Overload of too many Eco-labels in market making it difficult to understand
- Question 7: Availability of Eco-labels
- Question 9: Price sensitivity for Eco-labels

The third section is specially related to the message quality characteristics as defined by the ISO 14063 principles concerning environmental management and communication (2004 cited in Strömdahl, 2005, p. 15; Von Ahn & Wikström, 2005, p. 33-34) and recent purchase behavior. This phase on the survey might require a bigger effort from the respondent because they are asked to complete a table in where the 5 different symbols are shown. Respondents here can choose between “Yes” “No” or “Don’t know”. For every principle related with the ISO principle measured, 2 questions have been made, as follow:

- Question 1: Recent Purchase behavior
- Questions 2 and 3: Transparency
- Questions 4 and 5: Appropriateness
- Questions 6 and 7: Credibility
- Questions 8 and 9: Responsiveness
- Question 10: Clarity

To compute the data, respondents have previously been informed on the option to not answer the questions if they do not have the knowledge about the label or they do not remember it. For this reason, the responses have been processed in a total of 50 variables with 0=Don’t know, 1=Yes, 2=No. The reason for dividing section 3 into 50 different variables attends to the purpose of having every answer for every brand independent from the different responses. Because, as said before, every question is related to different characteristics and in order to make comparisons among variables and labels, an independent process of computing data is more suitable for this research.

The fourth section is about demographic information. It will be used to analyze responses in term of income, gender, age and nationality. The last aspect of nationality is especially important is the last aspect. Since the study is conducted in the Swedish market, it is important to determine if respondents have the same knowledge of eco-labels regardless of their nationality. For this reason, a distinction was made between Swedish and non-Swedish participants.

It is also important to add that the questionnaire have been distributed in two different languages: English and Swedish. The reason for this is because even though both members of this research are English speakers, the study is based on the Swedish market and it will be easier to understand for Swedish respondents if it is in their mother tongue. The second
language of English was also included due to the characteristics of Umeå. There is a high amount of international students that might be willing to participate on this survey and we did not want to exclude them by not offering a questionnaire in English.

The variables for this section and the values gave them to compute the data are the following:

- **Age**: Scale data
- **Sex**: 0 = Male, 1 = Female
- **Nationality**: 0 = Swedish, 1 = Norwegian, 2 = Pakistan, 3 = German, 4 = Turkish, 5 = Spanish, 6 = Italian, 7 = French, 8 = English, 9 = Malaysian, 10 = Bangladeshi, 11 = Chinese, 12 = Russian, 13 = Ukraine, 14 = American and 15 = Polish.
  *Later recoded to 0 = Swedish, 1 = Not Swedish*
- **Average Monthly Income**: 0 ≤ 10,000 SEK, 1 = 10,001-20,000 SEK, 2 = 20,001-30,000 SEK, 4 = 30,001-40,000 SEK, 5 ≥ 40,001 SEK
  *Later recoded to 0 ≤ 20,000 SEK, > 20,000 SEK*

### 4.4 Participants and sample selection

The sample size used on this research is based on 152 participants that have been chosen according to different criteria. Geographic location is the most important criterion. Eco-labels are present on many products so the research questions of awareness or understanding are not related with any specific retailer shop; for this reason, the sample is going to be chosen from different supermarkets in the city of Umeå. The supermarkets are located in the areas of Örstra Ersboda, Strompilen and Ålidhem. The supermarkets where the sample is going to be taken sell both food and other non-durable consumer goods. The names of these shops included in this survey are ICA, ICA Maxi, Koop Consum and WILLY´S. The collection of data occurred on the 7th and 8th of May, 2011 in the areas. The respondents were approached with the following greeting:

“Hello! We are Master’s student at Umeå Business school finishing my D thesis about eco-labeling. Can you please help us by answering this questionnaire? It will not take more than five minutes. Thank you!”

The way to intercept the people was polite and we always respected their choice to not answer the questionnaire since it is voluntary. It is necessary to clarify that people between 20 and 30 years old were always more willing to participate and fill-in the questionnaires. This may be due to the fact that they feel compelled to comply because they are also students who are/or have finished a thesis recently. It was harder to reach older ages because participants above 30 years old were more likely to have been with family or kids. This made it more difficult to answer the questionnaires and also the argument of time was used a lot when asking people to participate. In general, the most common reasons for not participating were “I don’t have time” or “I am with the family”.
4.5 Pretest and feedback

A pre-test have been conducted in order to assure that respondent can understand the questions and also to double-check for mistakes. The pre-test was conducted with students from Umeå School of business. The reason to choose them is based on the convenience for researchers and also that participants have a background on business sciences and marketing research. The feedback obtained from them could report two viewpoints: the consumer’s and the business student’s which gives them more expertise regarding business research than the average person. The sample for this pretest is 10 people. From this sample 5 have answered the questionnaire in Swedish and the other 5 have answered the English version. The feedback was positive but there were some important comments considered in the final questionnaire design. The initial questionnaire was not changed that much from the final one, although some changes were made after the feedback and analysis from the pretest:

- **Mistakes of grammar in the Swedish questionnaire**: There were several grammatical errors that occurred during translating the questionnaire from Swedish to English. This could be a bias from the researchers, due to that they are not Swedish-native speakers. The language was then rechecked with members of the pre-test and two other native Swedish speakers in order to correct errors due to translation.

- **Problems understanding**: A total of 7 respondents had difficulties understanding the question related to price sensitivity “I am very concerned about low prices”. The meaning and the purpose of the question were confusing to the respondents. This question was removed instead of rephrasing it because there is another question concerning price sensitivity in regards to eco-labels which did not present any difficulties for respondents during the pretest. Having the one question of “Eco-labeled products are priced too high for my budget” was reasoned to be more specific to the study and sufficient to measure price sensitivity.

- **Answering about each specific eco-label in section 3**: This third part of the questionnaire where respondents should answer yes or no to a series of statements regarding for each eco-label was confusing to the respondents. The main concern was that in some of the questions they did not know the answer or did not recognize the label, but they were forced to answer. To correct this problem a statement was made at the beginning of this section the following: “If you do not recognize the Eco-label or do not know the answer, please do not mark anything for that question”. By clarifying the directions, the respondents were then able to leave the space empty if they did not know the answer or did not recognize the label.

The three problems explain above are the ones found during the pretest and the feedback made by the experiment group. After making these three corrections, the final questionnaire was created, printed and handed in for the collection of data. The questionnaires can be found in Appendix 1 and 2.
Chapter 5: Results and Analysis

The purpose of this chapter is to present a summary of the results obtained during this research. The first section explains the composition of the sample in terms of demographics, the second part focuses further on descriptive statistics of the sample and the third section includes analysis and inferences made from the sample.

5.1 Composition of the sample

The composition of the sample consists on a total of 152 participants, of which 83 are male, 67 female and two variables were incomplete and deemed missing. The average age of the sample is 25.5 years old. This is a relatively low age in comparison with other cities and may for by the fact that the average age of Umeå inhabitants is 38 years old, and that 36,700 out of 115,500 inhabitants in Umeå are students, encompassing almost 1/3 of the total population of this city (Umeå municipality, 2010). The low age may be representative of the city of Umeå but not others. Or, the segment of participants between 20 and 30 years old may have just been more willing to participate in the survey than other age groups.

Nationality is another field relevant for this study because the aim of it is to analyze the Swedish market. In total 75% of the respondents are Swedish (114 people), and the other 25% (36 people) belong to different nationalities: Norwegian, Pakistani, German, Turkish, Spanish, Italian, French, English, Malaysian, Bangladeshi, Chinese, Russian, Ukranian, American and Polish.

To conclude with demographics, the income of the sample is low on more than the 60% of the respondents (less than 10,000sek of monthly income). The reason for this profile can be related to the average age of the sample and also due to 1/3 of Umeå inhabitants are students.

5.2 Descriptive statistics of the sample

In the first section of the survey, 2 characteristics were studied: 1 - if the customer is aware of the different labels within the Swedish market and 2 - if they know the meaning of them. Attached below is a graph with the awareness of the different brands:

<table>
<thead>
<tr>
<th>Aware/Unaware</th>
<th>Aware/Unaware</th>
<th>Aware/Unaware</th>
<th>Aware/Unaware</th>
<th>Aware/Unaware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage (%)</td>
<td>85.5% / 14.5%</td>
<td>79.6% / 20.4%</td>
<td>82.9% / 17.1%</td>
<td>48% / 51.3%</td>
</tr>
<tr>
<td>Nº of respondents</td>
<td>130 / 22</td>
<td>121 / 31</td>
<td>126 / 26</td>
<td>73 / 78</td>
</tr>
</tbody>
</table>

Awareness levels and unawareness levels of each eco-label are listed in this table by percentages and total number of respondents for comparison reasons.
In Table 1, the results of frequencies of awareness show that they vary for each eco-label. A distinction can be made between the first 3 labels: Swan, Bra miljöval and KRAV and the last two, the Euro-Leaf and MSC. For the first 3 labels, on average around 80% of the respondents are aware of them while for the Euro-Leaf and MSC the percentage of awareness decreased to the 50% range.

Table 2: Results of eco-label Understanding

<table>
<thead>
<tr>
<th>Percentage (%)</th>
<th>Und/Don’t Und*</th>
<th>Und/Don’t Und*</th>
<th>Und/Don’t Und*</th>
<th>Und/Don’t Und*</th>
</tr>
</thead>
<tbody>
<tr>
<td>59.2% / 33.6%</td>
<td>63.8% / 24.3%</td>
<td>35.5% / 55.9%</td>
<td>36.8% / 9.2%</td>
<td>25.7% / 22.4%</td>
</tr>
<tr>
<td>Nº of respondents</td>
<td>90 / 51</td>
<td>97 / 37</td>
<td>54 / 85</td>
<td>56 / 14</td>
</tr>
</tbody>
</table>

Understanding levels and misunderstanding levels of each eco-label are listed in this table by percentages and total number of respondents for comparison reasons. *Note - (Und= Understand, Don’t Und= Do not understand).

The second table shows the degree of understanding among respondents in relation to eco-labels. For this case the difference among labels is bigger between Swan and Bra Miljöval on one side (59.2% and 63.8% of understanding) and KRAV, EU Leaf an MSC (35.5%, 36.8% and 25.7% respectively) on the other side.

The second section of the questionnaire is related with personal attitudes of respondents that can allow researchers to create new variables. It is a Likert type scale and participants who responded with agree or strongly agree were grouped together and labeled as respondents who agreed with the statement. The responses are the following:

**Question 1) “ProEnviron.Attitude1”**: In this question, 54.6% of the respondents agree that their actual involvement on environmental activities today will help to save the environment for future generations.

**Question 2) “ProEnviron.Attitude2”**: For this question, 82.9% of the respondents agree that average citizens can act to stop environmental pollution.

These 2 questions belong to a variable call “Pro environmental attitude” and on average, 68.7% of respondents have developed this attitude. In general, the sample is concerned about the environment, they recognize that new practices are necessary to improve it and they are also aware that they have a role in this process.

**Question 3) “Enviro.Friendly.Belief1”**: In this question, 83.6% of the respondents agree that consumers should be interested in the environmental consequences of the product they purchase.

**Question 4) “Enviro.Friendly.Belief2”**: In this question, 73% of the respondents agree that consumers should be concerned about the uses and practices of eco-label.
For Questions 3 and 4, 78.3% of the respondents show and *environmental friendly belief*, or that they show concern for the practices related with consumption and purchasing of eco-labels.

**Question 5)** This question is related to the perceived difficulty related with the eco-labels on the market. For this question, 43.4% of the respondent do not perceive difficulty in choosing eco-labels products and 36% of them consider it complicated.

**Question 6)** This question is also related with the previous one and almost 50% of the respondents agree that there are too many eco-labels on the market which make difficult to understand all of them. For the other 50%, 25% is neutral and the other 25% does not agree.

The findings in questions 5 and 6 are not as clear as in the previous questions. Respondents agree that is not complicated to choose eco-labels but they recognize that there is an overload of eco-labels which make harder to understand them (explanations to these questions are offered later in the discussion).

**Question 7)** 58.3% of the respondents here agree that Eco-labeled products are readily available in the stores they shop at, against a 7.9% who disagree and a 36.2% who are neutral. This question shows that the distribution of eco-labeled products is not a problem to not purchase them. For the case of Sweden, eco-labeled products are available in the main retailer shops and are easy to find and purchase.

**Question 8)** The last question is related with price sensitivity and a total of 58.6% of the respondents agree that eco-label products are priced to high for their budget. This question requires more variables to analyze it, for example in relation to demographics, because the average age of respondents is 25.5 years old and also the income is low for more than 60% of the sample.
Table 3: Results of Recent Purchase Behavior and Message Quality

ISO 14063 standards were used to define the message quality criteria that were applied to the sample. This table lists the percentages of recent purchase behavior according to each criteria. *Note – DK refers to Don’t know.

The last section related to eco-labeling has an amount of 50 variables that end up in 150 possible responses, so is not our intention to comment on every response but to offer an overview of the obtained results. For section 4 of the survey, the results show that there is again a clear distinction between the labels found in the Swedish or Scandinavian market and the other two that operates in more markets. Besides this main finding that has been found also in the first section, this section can be divided in the following characteristics:

- **Recent purchase**: Other than one label, the percentages of people who have recently purchased an eco-labeled product hardly reach the 50% range. Also, around 25% of the national or Scandinavian brands and around 40% in the international labels do not know about their recent purchase behavior.

- **Transparency**: Results in this case show a lower percentage of transparency in comparison with recent purchase behavior.

- ** Appropriateness**: In this characteristic, not even half of the sample considers that eco-labels offer relevant information or are interested in more than selling a product. This percentage is relatively low and can have a bigger impact on the factors related with the misunderstanding of eco-labels.

- **Credibility**: The results shown in credibility together with recent purchase are the higher in this section. Respondents believe in what eco-labels represent and also consider that the information is accurate.
• **Responsiveness:** This question is related to whether a label is adapted to current environmental needs or not; and for all the labels, the percentage is relatively reaching around 40% for all eco-labels.

• **Clarity:** Together with recent purchase, clarity is the most important variable in this section. On an average in all eco-labels, respondents consider that with a better understanding of what they represent they will be more willing to purchase more products that incorporate the logo. Further explanations concerning clarity and understanding will be provided in the following chapter.

5.3 Analysis and inferences made from the sample

The analysis was completed by computing contingency tables and independent sample t-tests with SPSS. This analysis requires a .05 significance level (α); we accept only a 5% or less chance that the null hypothesis will be rejected when it is actually true. This includes overwhelming or strong evidence for statistical significance as stated by Keller (2005, p. 335):

- **Significance level is less than .01 implies that there is overwhelming evidence to infer that the alternative hypothesis is true, or that the test is highly significant**
- **Significance level lies between .01 and .05, there is strong evidence to infer that the alternative hypothesis is true and the result is deemed to be significant.**

5.3.1 Contingency tables - Participants’ demographic information

Contingency tables, or cross tabulations, are scales that measure the associations or relationships that can be found between two nominal variables (Keller, 2005, p. 57). They were applied to determine if there is a relationship between any of the participant demographic information and Understanding, Awareness and Recent Purchase Behavior. This will help us in gathering evidence to determine what factors affect Understanding, Awareness and Recent Purchase Behavior in order to answer our research questions. The Chi square test was completed to determine if the relationship was significant or not. The null hypotheses for these t-tests can be viewed below:

*H₀₁: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by gender.*

*H₀₂: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by age.*

*H₀₃: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by income.*

*H₀₄: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by nationality.*
Gender

Females had a higher likelihood for Understanding the MSC label ($\alpha = .028$) and the Euro-Leaf ($\alpha = .036$). Males were also more likely to report that they Did Not Know what the MSC and Euro-Leaf were. We are not able to accept the null hypothesis $H_{o1}$ for these pairings. All other pairings must accept this null hypothesis.

Age

Age was grouped by participants aged 30 or below and participants aged 31 and over. Participants aged 31 or over have a higher Awareness of the MSC label ($\alpha = .025$) and they were more likely to state that they have made a Recent Purchase certified by that label ($\alpha = .046$). We are not able to accept the null hypothesis $H_{o2}$ for this pair of variables. All other pairings must accept this null hypothesis.

Income

Income was grouped in to two categories of 20,000SEK or below a month and over 20,000SEK a month in order to determine if individuals who had a higher monthly income than the average student reported a different Understanding, Awareness or Recent Purchase Behavior for any of the eco-labels in this study. There were no reported differences between these variables and different income levels for any eco-label. The null hypothesis $H_{o3}$ must be accepted.

Nationality

Awareness for most eco-labels was higher for Swedish citizens. The Swan ($\alpha = .000$) Bra Miljöval ($\alpha = .000$), KRAV ($\alpha = .000$) and MSC ($\alpha = .017$) eco-labels had significantly higher levels of Awareness from the Swedish versus the International participants. The eco-labels have a higher presence in Sweden than other countries which may explain this finding. The Euro-Leaf did not have any reported differences in Awareness and this may be due to the fact that it is an eco-label that is present in all countries within the European Union. Also, although the MSC eco-label exits worldwide it was recognized by Swedes more than Internationals. Future research can be done to investigate if this may be due to other cultural factors which are out of the scope of this thesis paper, such as: a high presence of eco-labels and the drive to be environmentally friendly in Sweden in comparison to other countries.

There were differences in the gathered sample between Swedish and International participants in regards to Understanding the message of some of the eco-labels. The Swan ($\alpha = .030$), Bra Miljöval ($\alpha = .000$) and KRAV ($\alpha = .000$) eco-labels were Understood more often by Swedish versus International participants. The International participants were more likely to Not Understand or to Not Know the message of these eco-labels. This is most likely due to the fact that the Bra Miljöval and KRAV eco-labels exist only in the Swedish market and the Swan eco-label is found within the Scandinavian countries. International participants who have not been exposed to these eco-labels in their everyday lives for a long period of time will naturally not be as familiar with them and have more difficulty when Understanding their message.

Some differences can also be seen in the reported Recent Purchase Behavior between Swedish and International participants. Swedish participants report that they have recently
purchased a product with the Swan eco-label more than International participants ($\alpha = .014$). On the other hand International participants report that they have recently purchased a product with a Euro-Leaf more than Swedish participants ($\alpha = .002$). Again this may be due to the prevalence of the Euro-Leaf in more of the home countries of the International participants and the Swan eco-labels prevalence within Sweden. Future research could be completed to further investigate this finding. We are not able to accept the null hypothesis $H_0$ for this pair of variables. All other pairings must accept this null hypothesis.

5.3.2 Contingency tables - Eco-label message quality

Contingency tables were applied to determine if there is a relationship between any of the nominal test variables in sections 1 and 3 in the questionnaire (Keller, 2005, p. 52). This will help us in answering our research question regarding Understanding, Awareness and Recent Purchase Behavior in relation to message quality as defined by the ISO 14063 standards. The Chi square test was completed to determine if the relationship was significant or not. The following null hypotheses were utilized for this analysis:

$H_{05}$: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label and the Transparency quality questions.

$H_{06}$: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label and the Appropriateness quality questions.

$H_{07}$: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label and the Credibility quality questions.

$H_{08}$: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label and the Responsiveness quality questions.

$H_{09}$: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label and the Clarity quality question.

The significant relationships give us evidence to reject the null hypothesis and infer that there is the presence of an association between the variables in question. The end counts have been compared to the expected counts in the Chi square analysis in order to determine where the association lies. All significance levels which lead us to reject the null hypotheses are listed in the following three tables:

**Understanding** the message has associations with message quality as defined by the ISO 14063 standards for each eco-label. The associations are different for each eco-label, however, the first question regarding Transparency and the second question regarding Credibility had an association with every eco-label. They are the two message quality questions which have the most consistent association, illustrating their importance and cause for future research. In all associations for message quality and Understanding, the participants were more likely to state that they Understood the message if they also agreed that the message of the eco-label contained qualities according to the ISO 14063 standards. The Swan eco-label has the least amount of associations with message quality with only two and the Bra Miljöval eco-label has the most at seven. Understanding had varied and inconsistent relationships with message quality; the second Credibility question was the only question showing an association with every eco-label.
Table 4: Message Quality in relation to Understanding of the eco-label

<table>
<thead>
<tr>
<th></th>
<th>Transparency1</th>
<th>Transparency2</th>
<th>Appropriateness1</th>
<th>Appropriateness2</th>
<th>Credibility1</th>
<th>Credibility2</th>
<th>Responsiveness1</th>
<th>Responsiveness2</th>
<th>Clarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency</td>
<td>.019</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
<td>.001</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>n.s.</td>
<td>.000</td>
<td>n.s.</td>
<td>.000</td>
<td>n.s.</td>
<td>.000</td>
<td>.002</td>
<td>.002</td>
<td>n.s.</td>
</tr>
<tr>
<td>Credibility</td>
<td>n.s.</td>
<td>.001</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.026</td>
<td>.000</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.005</td>
</tr>
<tr>
<td>Clarity</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

This table lists the significance levels for the relationships between understanding the message of the eco-labels and message quality as defined by the ISO 14063 standards. *Note - n.s. refers to no significant relationship.

**Awareness** gives more significant levels of association between the eco-labels and the message quality according to the ISO 14063 standards that Understanding. Both questions regarding Transparency and Appropriateness and also the second question regarding Credibility have evidence of significant associations between them and eco-label Awareness. All associations include a higher Awareness when the participant stated that they Agreed that the eco-label possessed that message quality.

Table 5: Message Quality in relation to Awareness of the eco-label

<table>
<thead>
<tr>
<th></th>
<th>Transparency1</th>
<th>Transparency2</th>
<th>Appropriateness1</th>
<th>Appropriateness2</th>
<th>Credibility1</th>
<th>Credibility2</th>
<th>Responsiveness1</th>
<th>Responsiveness2</th>
<th>Clarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>.001</td>
<td>.001</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.026</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Credibility</td>
<td>.000</td>
<td>.009</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>.025</td>
<td>.011</td>
<td>.030</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Clarity</td>
<td>.004</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.047</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

This table lists the significance levels for the relationships between awareness of the eco-labels and message quality as defined by the ISO 14063 standards. *Note - n.s. refers to no significant relationship.

**Recent Purchase Behavior** exhibited the highest amount of associations across the board for all of the eco-labels. Only KRAV and the first question regarding Responsiveness were not statistically significant relationships. With only this one exception, there were associations between all message qualities and the participant stating that they have Recently Purchased a product or service that was certified by the corresponding eco-label. This gives strong evidence to support that the quality of the message can be associated with purchase behavior.
This is an interesting finding due to the fact that the consumer’s behavior can be related to the message quality even more so than the Understanding or Awareness of the eco-label. With further research, possibly with a more qualitative approach, it can be determined how the message quality is affecting the consumer’s choice to adopt eco-label products.

Table 6: Message Quality in relation to Recent Purchase Behavior of the eco-label

<table>
<thead>
<tr>
<th>Transparency1</th>
<th>Transparency2</th>
<th>Appropriateness1</th>
<th>Appropriateness2</th>
<th>Credibility1</th>
<th>Credibility2</th>
<th>Responsiveness1</th>
<th>Responsiveness2</th>
<th>Clarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.004</td>
<td>.002</td>
<td>.000</td>
</tr>
<tr>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>n.s.</td>
<td>.000</td>
<td>.001</td>
</tr>
<tr>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
<td>.000</td>
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<td>.000</td>
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<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
</tr>
</tbody>
</table>

This table lists the significance levels for the relationships between participants who stated that they recently purchased something certified by the eco-label and the message of the eco-labels and message quality as defined by the ISO 14063 standards. *Note - n.s. refers to no significant relationship.

This evidence leads us to reject the null hypotheses when the significance level is below .05 and infer that there is an association between Understanding, Awareness or Recent Purchase Behavior of eco-labels and the specific message quality questions listed in the above three tables.

A further cross tabulation was completed where both questions of each ISO 14063 principle was transformed into one overall variable. The following transformations were completed in order to create a more stringent control variable for message qualities:

- \((\text{Transparency1} + \text{Transparency2})/2 = \text{Transparency}\)
- \((\text{Appropriateness1} + \text{Appropriateness2})/2 = \text{Appropriateness}\)
- \((\text{Credibility1} + \text{Credibility2})/2 = \text{Credibility}\)
- \((\text{Responsiveness1} + \text{Responsiveness2})/2 = \text{Responsiveness}\)

In order to be considered as agreeing in the over message quality for the specific eco-label, the participant had to choose that they agreed with both questions for the message quality. The new variables were re-coded with 0 = Disagree (with both questions) and 1 = Agree (with both questions). This was done so that analysis could be completed on participants who disagreed overall or agreed overall with the message quality of the eco-label. The following hypotheses were completed in order to determine if combining these variables offered similar results as testing each message quality question singularly:

\(H_{010}: \text{There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label and the Transparency of its message.}\)

\(H_{011}: \text{There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label and the Appropriateness of its message.}\)
$Ho_{12}$: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label and the Credibility of its message.

$Ho_{13}$: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label and the Responsiveness of its message.

$Ho_{14}$: There is no association between Understanding, Awareness or Recent Purchase Behavior of any Eco-label and the Clarity of its message.

These cross tabulations resulted in considerably fewer significant associations between overall message qualities and the Understanding, Awareness or Recent Purchase Behavior of the participants; in total, only seven associations were found. There is a difference in amount of significant relationships due to the increased rigor of the variable measurement.

**Understanding** was found to have associations with Transparency ($\alpha = .033$) and Credibility ($\alpha = .013$) for the Bra Miljöval eco-label. Participants who stated that the message was Transparent and Credible were found to understand the message more than participants who stated that they message did not contain those qualities. Transparency also had an association with Understanding for the KRAV eco-label ($\alpha = .008$) indicating that it can be an influential quality for more than one eco-label in relation to understanding.

The Bra Miljöval eco-label also had associations between **Awareness** and Credibility ($\alpha = .003$) and Responsiveness ($\alpha = .008$). The Euro-Leaf has evidence of an association between Appropriateness ($\alpha = .027$) and awareness of the eco-label. **Recent Purchase Behavior** only had one association between MSC and the Appropriateness of the eco-label ($\alpha = .015$). It is evident that there are different message qualities that are relevant to specific eco-labels when performing a more stringent cross tabulation.

### 5.3.3 Independent sample t-tests

An independent sample t-test was completed for each eco-label’s Awareness, Understanding and Reported Recent Purchase Behavior in comparison to outside factors that can influence eco-label adoption found in section 2 of the questionnaire. These factors include Pro-environmental Attitude, Belief in Environmentally Friendly Behavior, and Perceived Difficulty in understanding Eco-labels, Perceived Eco-label Overload, Availability and Price Sensitivity and were discussed in section 2.5 of this report. This will aid us in answering our research questions regarding other factors that might impact Understanding, Awareness and Recent Purchase Behavior of eco-labels. The t-test was chosen as the means of analysis for this data due to the fact that it is nominal data for which the standard distribution was unknown. The independent sample t-test compares the means of each test variable when divided into two different groups by a grouping variable. The null hypotheses for these t-tests can be viewed below:

$Ho_{15}$: There is no difference between the means of Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by Pro-environmental Attitude question 1.

$Ho_{16}$: There is no difference between the means of Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by Pro-Environmental Attitude question 2.
$H_{017}$: There is no difference between the means of Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by Belief in Environmentally Friendly Behavior question 1.

$H_{018}$: There is no difference between the means of Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by Belief in Environmentally Friendly Behavior question 2.

$H_{019}$: There is no difference between the means of Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by Perceived Difficulty in understanding Eco-labels.

$H_{020}$: There is no difference between the means of Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by Perceived Eco-label Overload.

$H_{021}$: There is no difference between the means of Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped Availability of Eco-labels.

$H_{022}$: There is no difference between the means of Understanding, Awareness or Recent Purchase Behavior of any Eco-label when grouped by Price Sensitivity of Eco-labels.

Outside factors have been found to be related to the participants’ Understanding, Awareness and Recent Purchase Behavior and have caused us to be unable to accept all of the null hypotheses listed above. All instances where the significant level was below .05 are listed below in the following three tables.

**Understanding** has been shown to be significantly affected by Perceived Difficulty in Understanding eco-labels for both the Swan and the Bra Miljöval eco-labels. In other words, participants who understood the Swan labels message were more likely to state that they feel that choosing eco-labeled products is rather complicated. This is a confusing finding but can be explained by the fact that individuals who pay closer attention to eco-labels and are invested in understanding them may feel that it is a more difficult to make a decision. This higher level of decision making falls in line with the Thøgersen et al. model of eco-label adoption (2010, p. 1790); individuals progress through two phases before they adopt the eco-label continually. They invest more time and effort into making their purchase versus individuals who have not taken the time to recognize the eco-label and correctly perceive the meaning of it.
Table 7: Factors affecting Understanding of the eco-label

<table>
<thead>
<tr>
<th></th>
<th>Bra Miljöval</th>
<th>KRAV</th>
<th>MSC</th>
<th>Euro-Leaf</th>
<th>Swan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pro-Environmental Attitude</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Environmentally Friendly Belief</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Perceived Difficulty</td>
<td>.046</td>
<td>.002</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Overload of Eco-labels</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Availability</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Price Sensitivity</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

This table lists the significance levels for the relationships between understanding the message of the eco-labels and factors other than message quality as defined by the literature review. *Note - n.s. refers to no significant relationship.

**Awareness** of the eco-labels was affected by more factors than Understanding. Perceived Difficulty in choosing eco-labeled products affected the most eco-labels out of all of the factors including the Swan, Bra Miljöval and KRAV eco-labels. Following that Environmentally Friendly Belief has associations for both Bra Miljöval and KRAV eco-labels and their awareness. Also, participants who stated that they perceive too many eco-labels making it difficult to understand them all was related to higher levels of Awareness in the MSC eco-label.

Table 8: Factors affecting Awareness of the eco-label

<table>
<thead>
<tr>
<th></th>
<th>Bra Miljöval</th>
<th>KRAV</th>
<th>MSC</th>
<th>Euro-Leaf</th>
<th>Swan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pro-Environmental Attitude</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Environmentally Friendly Belief</td>
<td>n.s.</td>
<td>.029</td>
<td>.000</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Perceived Difficulty</td>
<td>.001</td>
<td>.015</td>
<td>.000</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Overload of Eco-labels</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.044</td>
</tr>
<tr>
<td>Availability</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Price Sensitivity</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

This table lists the significance levels for the relationships between awareness of the eco-labels and factors other than message quality as defined by the literature review. *Note - n.s. refers to no significant relationship.

**Recent Purchase Behavior** was influenced the most by these factors. Environmentally Friendly Belief was found to be related to individuals who recently purchased from all eco-labels except the Euro-Leaf. This indicates a high influence of beliefs on the eco-label adoption process. Pro-Environmental Attitude was also associated with recent purchase behavior for the KRAV and Euro-Leaf. This supports the Thogersen et al. model of eco-label adoption (2010, p. 1790); personal factors like beliefs and attitudes have an influence over the individual’s tendency to purchase eco-labeled products. The KRAV eco-label was affected by
both of these factors and also Price Sensitivity. Individuals who stated that eco-labeled products were priced too high for their budget were more likely to state that they had recently purchased them.

Table 9: Factors affecting Recent Purchase Behavior of the eco-label

<table>
<thead>
<tr>
<th></th>
<th>Miłomar</th>
<th>Bra Miłowa</th>
<th>KRAV</th>
<th>Eco-organic</th>
<th>SFS-ECO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pro-Environmental Attitude</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.001</td>
<td>.025</td>
<td>n.s.</td>
</tr>
<tr>
<td>Environmentally Friendly Belief</td>
<td>.023</td>
<td>.016</td>
<td>.008</td>
<td>n.s.</td>
<td>.030</td>
</tr>
<tr>
<td>Perceived Difficulty</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Overload of Eco-labels</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Availability</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Price Sensitivity</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.035</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

This table lists the significance levels for the relationships between understanding the message of the eco-labels and factors other than message quality as defined by the literature review. *Note - n.s. refers to no significant relationship.
Chapter 6: Discussion and Conclusions

This section aims to answer our research questions. We will be relating the results to the research questions in order to generate contributions of this research. These findings can then lead to future studies in the area of eco-label message communication.

6.1 Discussion - Is the message getting trough?

This section is related to the basic purpose of this research, to find if consumers understand the message of the eco-label and determine if this affects purchase behavior. These findings will be utilized to answer our research questions in the conclusion. We as researchers consider that understanding the message is vital in the process of eco-labeling. This study does not analyze impulsive buying or a low-involvement process. The purchase of eco-labels products is a high-involvement process. It requires awareness of the eco-labels offered in the market and knowledge of what the eco-labels represent (Thørgesen et al., 2010, p. 1790). Purchasing eco-labeled products represents the consumer’s progression through these two vital steps. In this specific market, where these three main forces are involved, is not enough to be aware of these practices; it is also necessary to fulfill the steps of understanding the message and purchasing the product in order to “get the message trough” from eco-label certifying organization by sending a message to the consumer (Kotler, 2009, p.539).

The following analysis in Table 10 was created by using respondent’s answers in order to provide an approach of the real number of people that get the message and adopt the green behavior. Thørgesen et al. (2010, p. 1790) eco-label adoption process model shows that several areas affect the adoption of an eco-label: environmental, personal and product-related factors and he also identified 6 steps. This researcher has considered these factors and also the model of communications of Kotler (2009, p.539) in order to create a new series of steps that better fulfill this study. As stated before, in order for the message to have fully gotten through to the consumer’s purchasing behavior, respondents have to be aware, understand and purchase the product. The consumer must recognize the eco-label and understand what the message is according to the third party organization; this definition was obtained through the information provided by the certifying organizations with the use of the semi-structured interview. Also important to consider in relation to awareness and understanding is the noise factor. Noise could cause low awareness and understanding of the message and this could lead to a low rate of purchasing in eco-labeled products. The following table shows the percentage of people where the “message is getting through”, or those who have adopted green purchasing behavior through the influence of an eco-label. The procedure to calculate the final percentage (%) is based on % of people who are aware multiplied by the % of people who understand multiplied by the % of people who have recently purchased the product.
Table 10: Is the message getting through?

<table>
<thead>
<tr>
<th>Eco-label</th>
<th>% Of respondents Aware</th>
<th>% Of respondents that Understand</th>
<th>% Of respondents That Purchased</th>
<th>Calculation</th>
<th>Final %</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Image]</td>
<td>85.5%</td>
<td>59.2%</td>
<td>63.8%</td>
<td>0.855 X 0.592 X 0.638</td>
<td>32.2%</td>
</tr>
<tr>
<td>Bra Miljöval</td>
<td>79.6%</td>
<td>63.8%</td>
<td>38.8%</td>
<td>0.796 X 0.638 X 0.388</td>
<td>19.7%</td>
</tr>
<tr>
<td>KRAV</td>
<td>82.9%</td>
<td>35.5%</td>
<td>52.6%</td>
<td>0.829 X 0.355 X 0.522</td>
<td>15.36%</td>
</tr>
<tr>
<td>[Image]</td>
<td>48%</td>
<td>36.8%</td>
<td>8.6%</td>
<td>0.48 X 0.368 X 0.086</td>
<td>1.52%</td>
</tr>
<tr>
<td>[Image]</td>
<td>50.7%</td>
<td>25.7%</td>
<td>15.8%</td>
<td>0.507 X 0.257 X 0.158</td>
<td>2.05%</td>
</tr>
</tbody>
</table>

This table displays the percentages of the sample that are Aware of, Understand the message of and have Recently Purchased each eco-label. This refers to individuals who have fully adopted the eco-labels.

To further investigate consumer’s understanding and eco-label adoption, other factors affecting awareness, understanding and recent purchase behavior will be analyzed. Thøgersen et al. makes a distinction between environmental, personal and product related factors in their eco-label adoption model (2010, p. 1790) and important factors that affect eco-label adoption have been indentified in section 2.5 of this report. These factors will now be analyzed in order to answer the research sub-questions.

6.1.1 Awareness of eco-labels

The sample of this study is aware of the different labels in the Swedish market, but they don’t show the same level of awareness for every brand. For the case of the eco-labels present only in the Swedish or Scandinavian market (Swan, Bra Miljöval and KRAV) have a higher awareness than for the European or international labels (Euro-Leaf and MSC). The differences in awareness are quite significant among these two groups, having more than a 30% of difference in understanding. The interpretation of these results shows that customers on the Swedish market are more aware of the national labels within Sweden. The reasons related to this tendency might be related with the following arguments:

- **Exposure**: In order to be aware of something, people have to be exposed to the objects and stimuli. For the case of the Swedish market it might result that respondents are more aware of their national eco-labels because they have been exposed to them for a longer period of time.
- **Producer side**: Swedish companies are more knowledgeable of their own market and by developing tailored strategies for the Swedish market the resources invested in communicating a message can cause a better impact.
- **Competition between eco-labels**: The labels that are standard for different countries can have a problem of awareness in the Swedish market due to the large number of “national” labels present in the market.
• **Marketing mix tools:** The labels that operate in different countries could follow standard strategies for markets in different countries versus specific country strategies. This could lead to poor communication and a lower rate of awareness.

**Factors related to the awareness of eco-labels**

Continuing on the discussion of factors related to the awareness of eco-label, it’s important to cite the Thørgesen et al. eco-label adoption process (2010, p. 1790). In this model, three factors have been identified in order to purchase and eco-labeled product: environmental, personal and product related factors that have been explained in previous chapters. The findings of our analysis complement this model and indicate that the quality of the message according to the ISO 14063 guidelines (2004 cited in Strömdahl, 2005, p. 15; Von Ahn & Wikström, 2005, p. 33-34) together with outside environmental, personal or product factors affect the awareness levels of the eco-labels. Credibility, Responsiveness and Appropriateness were related to awareness levels when reviewing the results of the stringent t-test regarding overall message quality factors. Therefore, message quality from the organization did have an impact on the level of awareness of eco-label in our sample. This can be considered a product related factor which impacts the consumer’s awareness of the eco-label and is a significant finding for the eco-label organizations to consider.

There were several personal factors that affected awareness. Age was related to higher awareness for one of the eco-labels indicating a weak impact. Nationality, on the other hand, gave evidence indicating a strong impact factor for awareness. Swedish participants were more likely to be aware of all of the eco-labels except for the Euro-Leaf. As discussed previously, this falls in line with the idea that cultural aspects have an influence on a consumer when they are making their purchase decisions. Swedes will have a higher knowledge of their national eco-labels than International individuals. Participants who had a high level of environmentally friendly belief were more likely to be aware of the eco-labels. Furthermore, individuals that perceive choosing an eco-labeled is complicated process were more likely to be aware of eco-labels than those who are not. This falls in line with the concept that this is a high-involvement decision making process. Consumers with a high environmentally friendly belief will be influenced more to search for information regarding sustainable products and therefore have a higher awareness of them. These consumers will most likely perceive that it is a complicated process to choose an eco-label since they are actively involved in an information search and taking many more factors into consideration when they are making purchases versus individuals who are not motivated by an environmentally friendly belief.

### 6.1.2 Understanding of eco-labels

The second aspect to consider here is the understanding of labels. It is vital in a market that customers are aware of the different products, but it is also true that awareness is not the only factor that leads to a purchase. Understanding of eco-label gives the consumer the knowledge they need in order to make a purchase decision. It is especially important if we consider the fact that eco-labeled products satisfy a necessity to the customers and also offer an added value of reducing impact on the environment and building a more sustainable world. The message of the eco-labeling organization, the Sender, was confirmed by the semi-structured interview and utilized to test if the consumer, the Receiver, knowledge of the eco-label’s message in section 1 of the questionnaire. By comparing the message of the Sender to the
Receiver’s answer, we were able to determine if the message was transmitted and understood by the consumer. Results show that understanding is also related with awareness but for this case, the percentage of understanding of eco-labels is lower than the awareness of them. The brand best understood by costumers is Bra Miljöval (63%), followed by Swan (60%) and then lower percentages (Around 35%) of the Euro-Leaf, KRAV and MSC.

Factors related to understanding of eco-labels

Our analysis found that understanding was influenced by several factors. Gender did influence the understanding of two eco-labels, where females better understood the message that the certifying organization was attempting to convey. Again, Nationality was a strong factor that related to understanding the eco-label. The Swan, Bra Miljöval and KRAV eco-labels were more likely to be understood by Swedes versus Internationals. This seems to be a natural phenomenon which can be explained by the fact that these are eco-labels that are heavily present in the Swedish market. The environment and culture that an individual grows up in will naturally influence what they are exposed to and how they perceive it. Since Swedes were exposed to eco-labels that are prevalent in Sweden more often than Internationals, we can easily explain why they are more understood by Swedish consumers. Again, perceiving that it was complicated to choose an eco-labeled product also related to understanding for two eco-labels. Consumers highly invested in understanding the eco-label will find it more to be a more complicated process.

Message quality was related to understanding in regards to Transparency and Credibility. Transparency was a significant factor for the understanding of both the Bra Miljöval and KRAV eco-labels. Participants were more likely to understand the message if they also felt that the message was Transparent and Credible.

6.1.3 Recent purchase behavior of eco-labels

The last factor in this section is the Recent Purchase behavior on the eco-labeling process. For this behavior respondents also follow the pattern of tendency regarding the group of labels operating only in the Swedish and Scandinavian market and the labels present in more countries. Respondents show a higher purchase behavior in the Swan, KRAV and Bra Miljöval and a much lower purchasing act on the EU Leaf and MSC.

Factors related to recent purchase behavior

For the third time, Nationality is a factor that is related to the eco-label adoption process. Swedish participants were more likely to state that they recently purchased something certified by the Swan eco-label whereas International participants were more likely to state that they recently purchased something certified by the Euro-Leaf. This falls in line with the degree to which each individual would be influenced by the eco-label from their home country. The Swan label is a highly present eco-label in the Swedish market whereas the Euro-Leaf could be much more present in other international participant’s countries throughout Europe. Age also had a relationship with one of the eco-labels. Individuals aged 31 or over were more likely to state that they had recently purchased a MSC labeled product versus individuals aged 30 or under.
When analyzing message quality for each single question from section 3 in relation to recent purchase behavior, there are significant relationships for all but one pairing. This should lead us to find that message quality is an important factor related to purchase behavior. However, when the message quality questions are grouped into a more stringent t-test measure, only one of the pairings is found to have a significant relationship. A relationship exists between recent purchase behavior of the MSC eco-label and Appropriateness. If the MSC message was Appropriate, participants were more likely to state that they had recently purchased it.

6.2 Conclusions and answering the research questions

The results obtained in this research concerning awareness, understanding and recent purchase behavior have a clear distinction between two groups. The following classifications can be made in order to structure these findings:

- **Group 1: Labels that operate in the Scandinavian market only.** Respondents of the sample show a greater awareness and information concerning these labels (Swan, Bra Miljöval and KRAV).

- **Group 2: Eco-labels that operate in different areas than Scandinavia.** Here the difference in awareness and information is greater. Respondents show lower coefficients of knowledge on these labels (EU Leaf and MSC).

It is important to make a distinction among these two groups, because they represent different characteristics and also do not have the same influence, coverage and position in the Swedish market. The reasons why customers are more aware of, understand better and have a higher likelihood to have recently purchased a product with the eco-labels in the first group rather than products with labels from the second group can be related to culture effects, which can be viewed as an outside influencing factor in the eco-label adoption process (Thørgesen et al., 2010, p. 1790). These eco-labels have been present in their respective markets for a longer period of time and this could affect the awareness and understanding among costumers. It is also important to take into consideration that the Euro-Leaf logo and the MSC eco-label are relatively new. Also, the MSC eco-label is international and that might interfere in the efforts of reach the same level of awareness and understanding than the Scandinavian Labels.

- **Do consumers understand the message of an eco-label?**
  - What are the factors related to understanding the eco-label?

These findings support the fact that eco-label adoption is a high involvement process that is influenced by many factors. The findings of this research allow us to answer our first research question. In regards to understanding the message of an eco-label, we found that the percentage of individuals who understood the message varied greatly by eco-label. Eco-labels that are much more prevalent in the Swedish market were understood more by the participants from our sample. This and the findings from our analysis lead us to state that Nationality is a noteworthy factor related to eco-label understanding. In relation with Kotler’s model of communication and the noise relation (Kotler, 2009, p.539 ) the message quality in regard to Transparency and Credibility (ISO 14063, 2004 cited in Strömahl, 2005, p. 15; Von Ahn & Wikström, 2005, p. 33-34) are also related to understanding and lead us to believe that the quality of the message can impact that ability for the consumer to understand it. From the
certifying organization’s perspective, sending a message containing these qualities they will reduce the amount of noise during the transmission and misunderstanding of the message.

- Do awareness and understanding affect purchase behavior of and eco-label?
  - What are the factors related to the purchase of eco-labeled products?

In response to our second research question, we find that the reported recent purchase behavior was positively affected by the participant’s awareness and understanding of the eco-label. This follows the eco-label adoption process that is dependent upon being aware of and incorporating an understanding of the message prior to repeat purchasing of the eco-label. Message quality can be considered to have a relationship with purchase behavior when reviewing the analysis of specific message quality statement cross tabulations (See section 5.3). Future research should be completed in order to confirm these findings.
Chapter 7: Limitations of Research Approach and Suggestions for Future Research

This section reviews the quality of our research with the following criteria: validity, reliability, replicability and generalizability. The assessment will focus on the survey due to the quantitative approach adopted by this study. By evaluating our work we hope to attest that this research was completed at the Master’s level and also show how it offers contributions which can be used in future research.

Overall, the choice to apply a quantitative approach has allowed us to view relationships between variables (Bryman & Bell, 2007, p. 44) but it has come with some limitations. We are able to view that relationships exist; however we are not able to explain how, when or why it came to be (Yin, 2003, p. 9). The quantitative method has also been criticized for reducing complex human behavior down to narrow variables which do not represent what the complexities of the real world (Bryman & Bell, 2007, p. 159-160). A qualitative study would have been necessary to answer these much more in depth research questions which “the investigator has little or no control over” (Yin, 2003, p. 9). In spite of these limitations, the best fit for this research was deemed to be the quantitative method due to the nature of the problem and research questions. There is a strong focus on patterns of association between variables in quantitative research, and this study is no exception. In order to view evidence of these patterns though “it is necessary to have a systematic and standardized method of gauging variation” (Bryman & Bell, 2007, p. 44). By adopting a more standardized controlled approach this study has been able to fulfill its goals. In the long view, it was necessary to accept the limitations the quantitative approach in general in order to attain our purpose of this research.

7.1 Research quality criteria

7.1.1 Validity

Measurement or construct validity “is to do with the question of whether a measure that is devised of a concept really does reflect the concept that it is supposed to be denoting” (Bryman & Bell, 2007, p. 41). In other words we aim to study what we state we are researching in this report. In general, the measured value is compromised of three parts, the true value, bias and random error (Moore & Notz, 2006, p. 142). So the true value can be compromised by two types of error, bias, or “systematic error that occurs every time we make a measurement” and random error which occurs unpredictably in nature (Moore & Notz, 2006, p. 142). This study attempted to reduce bias and random error as much as possible in order to come as close to the true value as possible. To achieve these goals we paid close attention to the questionnaire design and attempted to make the sample as representative of the population as possible even under our time and costs constraints.

Bryman and Bell further define different types of validity: internal, external and ecological validity. Internal validity is “a concern with the question of whether a finding that incorporates a causal relationship between two or more relationships is sound” (Bryman & Bell, 2007, p. 728). Although this research is not of an experimental design so it therefore does not claim causality, it is important to review the effectiveness of the questionnaire to make sure that the questions are appropriate and well-founded. The questions in the questionnaire were created from the most reliable sources as possible. For section 1 of the
questionnaire, the intended message that the eco-label is attempting to relay to the consumers was requested directly from the organization. We were able to directly contact four out of the five organizations who confirmed that the questions were representative of their message. The final organization (The Euro-Leaf) did not have contact information available on their website (even though attempts were made to reach them by e-mail) but did have a page dedicated to their “Key messages and slogans” which was utilized to create the question for their Eco-label (European Commission, 2011). Also, the Handbook of Marketing Scales (Bearden & Netemeyer, 1999) was used as a reference for creating the questions in sections 2 and 3 in the questionnaire. In this way, we attempted to create the questions for the questionnaire from a reliable source and remove as much of the researcher’s influence as possible.

Furthermore, the questions were posed as simply and clearly as possible to avoid confusion. Also, a pre-test was conducted in order to make sure that it was understandable and participants would be able to answer the questions without a high degree of difficulty. The pre-test revealed some corrections were necessary and we improved the questionnaire to the best of our abilities before the true sample was taken (please refer to section 4.6 for a more detailed list of findings and corrections). We do recognize that in spite of our efforts to make the questionnaire as understandable as possible there were still some issues of confusion with the questions. This occurred within section 3 especially if the participants did not read the instructions. By being available to answer questions on the spot during surveying, we were able to help the participants when they encountered this problem. Due to the fact that we attempted to reduce bias in this study as stated above, we feel that this research has internal validity.

External validity is “a concern with the question of whether the results of a study can be generalized beyond the specific research context that it was conducted” (Bryman & Bell, 2007, p. 727). Our goal was to sample consumers in Umeå and our sample was taken by surveying consumers at shopping centers in the Umeå area. A convenience sample was taken, however we attempted to increase the randomness of our sample by sampling several shopping areas on different days. Applying a simple random sample would have decreased the sampling error (random error) of this study even further but we were unable to apply a sample due to the time and cost constraints placed on us as students attempting to complete our Master’s thesis (one-year) in the time allotted. Under the constraints placed on us we attempted to make this study as externally valid as possible and we feel that inferences from our findings can represent the population we were studying.

Ecological validity refers to “whether the social scientific findings are applicable to people’s every day, natural social settings” (Bryman & Bell, 2007, p. 42). This study’s purpose and research questions were chosen due to the influence of Eco-labels and their increased trend for green consumer behavior. With the growing concern of sustainable practices in order to protect and/or repair the environment we feel that Eco-labels are of great use to consumers interested in adopting green behavior and bringing attention to green options to all consumers in general. Eco-labels occur in a great number of product and service categories and the number of Eco-labels in use is currently on the rise. The Eco-labels that were chosen for this study are very relevant in the Swedish market (Konsumentverket, 2010) and we feel that this makes this research ecologically valid.

Overall, we attempted to make sure that this study is as valid as possible from the beginning when we started designing it to the actual collection of data. When applying this criterion to this research, we feel that we can state that this research does study what it intends to.
7.1.2 Reliability

Internal reliability is “the degree to which the indicators that make up a scale are consistent” (Bryman & Bell, 2007, p. 728). In other words, the tool used in research should measure the variable in question consistently in every measurement. The questionnaire is the primary scale or tool utilized in this research. When creating the questionnaire, we made every attempt to remove as much bias and confusion as possible when creating the questionnaire itself. Also, a plan was designed the manner with which the questionnaire was distributed was designed by the researchers prior to distribution so that they would be allocated in a similar manner in every instance. Due to these factors we feel that this study is reliable.

7.1.3 Replicability

Replicability refers to the ease with which this study can be repeated by future researchers (Bryman & Bell, 2007, p. 41). Every attempt was made to document the practical methodological approach that was utilized for this study in order to ensure that it is replicable. As stated earlier when discussing validity, this study aimed to maintain an objective approach to this research and to exclude bias. By doing so, we have allowed anyone to be able to conduct the same study since the results will not be affected by our values and beliefs. Furthermore, all procedures, such as: sample selection and distribution, survey design and data analysis methods, were documented in detail in order to make sure that the methods were explicitly stated to reduce any confusion that may have arisen. We feel that this will allow future researchers the opportunity to replicate this study if they wish to do so.

7.1.4 Generalizability

Generalizability refers to the “ability to make inferences for the population for which the sample represents” or that the findings can be extended outside the specific sample that was taken to a wider population (Bryman & Bell, 2007, p. 728; ibid, p. 156). “It is a concern with the external validity of research findings” (Bryman & Bell, 2007, p. 728) and as discussed earlier in the validity section, we attempted to make sure that our sample was as representative of our population as possible. We were limited by time and cost constraints but efforts were made to have a sample that is as representative of the population as possible under these circumstances. Also, several popular Eco-labels within Sweden were chosen to be included in this study to increase the ability for these findings to be extended to a broader range. We feel that these results can be generalized outside of this specific sample and therefore this study has generalizability.

7.2 Future research

This study has been conducted in order to provide a better understanding regarding the field of marketing communications and the practices of eco-labeling through answering our research questions. Although the research has shown interesting results that can be applied in this field, this study cannot provide a complete picture of the entire market and all the factors that influence it. For these reasons, it is also important that further research on the field of eco-labeling and communication should be conducted.

One the first items to take into consideration for the study design is related with the survey method; the questionnaire has measured how the message is understood by customers and it should be reviewed to find out if there is a way to improve these questions regarding the measurement of message quality. The quality of the message is something important when
communicating; is not enough if actual and potential customers know a determined product or service, they also have to know what it represents and which benefits can rapport.

Furthermore, this research can be expanded upon through the use of a different research approach. This is a quantitative study that have reported interesting findings, as said before, but it is also necessary to clarify that a qualitative study would help to figure out what factors are related to how the eco-label adoption process is affected by message quality and other outside factors. In this study researchers have been able to state the relationship among variables but not to identify the origins of these relationships.

Lastly, further research is regarding cultural differences and prevalence of eco-labels in different countries could be completed. The results showed a significant difference between the labels that are present only in Sweden and Scandinavian countries versus labels that work in different markets outside one of these areas. A comparative study between countries or a division of the eco-labels between eco-labels operating in Sweden and outside Sweden could complement this study and at the same time contribute to increased knowledge in improving the environmental communication standardization guide.
References


Personal Communication


Hello! We are two Master’s students from Umeå Business School conducting research about Eco-labels and how people understand and use them. Your responses will be confidential, secure and used only for research purposes. We thank you for your participation!

1. Which one statement best describes the following Eco-labels?

- a) Sustainably produced food
- b) Sustainably produced product or service
- c) Sustainably harvested forest
- d) Do not know
- e) I have not seen this Eco-label before

- a) Sustainable forestry
- b) Chemical-free products
- c) Organic farming in European countries
- d) Do not know
- e) I have not seen this Eco-label before

- a) Least harmful product to the environment
- b) No animal suffered to produce this product
- c) Paper that is environmentally friendly
- d) Do not know
- e) I have not seen this Eco-label before

- a) Fished in the EU
- b) Sustainably farmed fish
- c) Sustainable fishing for healthy oceans, livelihoods and economies
- d) Do not know
- e) I have not seen this Eco-label before

- a) Organic food production
- b) Organic food production that is also socially responsible
- c) Certified organic cosmetics
- d) Do not know
- e) I have not seen this Eco-label before

2. To what extent do you agree or disagree with the following statements? Please circle the number that best corresponds to your answer. (Strongly disagree = 1, Strongly agree = 5)

1. My involvement in environmental activities today will help save the environment for future generations.  
   1 2 3 4 5

2. There is nothing the average citizen can do to stop environmental pollution.  
   1 2 3 4 5

3. Consumers should be interested in the environmental consequences of the products they purchase.  
   1 2 3 4 5

4. People should be concerned about the uses and practices of Eco-labeling.  
   1 2 3 4 5

5. Choosing Eco-labeled products is rather complicated.  
   1 2 3 4 5

6. There are too many Eco-labels making it difficult to understand them all.  
   1 2 3 4 5

7. Eco-labeled products are readily available in the stores I shop at.  
   1 2 3 4 5

8. Eco-labeled products are priced too high for my budget.  
   1 2 3 4 5

Please continue to the next page!
Appendix 1 – Questionnaire in English
Communicating with Eco-labels

3. Please circle Yes if you agree with the statement or circle No or if you disagree with the statement for each Eco-label you recognize. If you do not recognize the Eco-label or do not know the answer, please do not mark anything for that question.

<table>
<thead>
<tr>
<th>I have recently purchased a product or service that was certified by this Eco-label.</th>
<th>Yes/No</th>
<th>Yes/No</th>
<th>Yes/No</th>
<th>Yes/No</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is easy to access and learn information about this Eco-label.</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>My knowledge about this Eco-label does not come from the company but instead from colleagues and friends.</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>This Eco-label is interested in more than just selling me a product and making a profit.</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>This Eco-label offers me relevant information.</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>If this Eco-label makes a claim or promise about a product it is probably true.</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>I believe the information about this Eco-label is accurate.</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>This Eco-label’s guidelines and certifications are up to date.</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>This Eco-label is adapted to the current environmental needs.</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>With a better understanding of this Eco-label, I would be willing to purchase more products that have this logo.</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>Yes/No</td>
</tr>
</tbody>
</table>

4. General Information

What is your age? □□

Are you Male or Female? □ Male □ Female

What is your nationality? □ Swedish □ Other, please specify_________________

What was your average monthly income this last year (including CSN)?

□ ≤ 10 000SEK □ 10 001 - 20 000SEK □ 20 001 - 30 000SEK
□ 30 001 - 40 000SEK □ ≥ 40 001SEK

Thank you for your participation!
Hej! Vi är två Master studenter från Umeå Handelshögskola som bedriver forskning om miljömärkning och hur människor förstår och använder dem. Dina svar kommer att vara konfidentiella och användas endast för forskningsändamål. Vi tackar för din medverkan!

1. Vilken förklaring beskriver bäst följande miljömärken? Välj bara ett alternativ)
   a) Hållbart producerad mat
   b) Hållbart producerad produkt eller tjänst
   c) Hållbart producerade skogsprodukter
   d) Vet inte
   e) Jag har inte sett detta miljömärke förut

   a) Hållbart skogsbruk
   b) Innehåller inga kemikalier
   c) Ekologiskt jordbruk i europeiska länder
   d) Vet inte
   e) Jag har inte sett detta miljömärke förut

2. I vilken utsträckning håller du med eller inte om följande påståenden? Vänligen sätt en cirkel runt den siffra som bäst motsvarar ditt svar. (Instämmer inte alls = 1, Instämmer helt = 5)
   1. Mitt engagemang i miljöarbetet i dag kommer att hjälpa till att rädda miljön för kommande generationer.
   2. Det finns inget den genomsnittlige medborgaren kan göra för att stoppa miljöförstöringen.
   3. Konsumenter bör vara intresserade av de miljömässiga konsekvenserna av de produkter de köper.
   4. Folk borde bry sig om nyttan av att ha miljömärkning i samhället
   5. Att välja miljömärkta produkter är ganska komplicerat.
   7. Miljömärkta produkter är lättillgängliga i butikerna jag handlar på.
   8. Miljömärkta produkter prissätts för högt för min budget.

Vänligen fortsätt på nästa sida!
Appendix 2 – Questionnaire in Swedish
Kommunikation med miljömärken


| Jag har nyligen köpt en produkt eller tjänst som har certifierats av denna miljömärkning. | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej |
| Det är lätt att komma åt och lära sig information om denna miljömärkning. | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej |
| Mina kunskaper om detta miljömärke kommer inte från bolaget utan från kolleger och vänner. | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej |
| Denna miljömärkning är intresserad av mer än att bara sälja mig en produkt och göra en vinst. | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej |
| Detta miljömärke ger mig relevant information. | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej |
| Om detta miljömärke gör anspråk eller löfte om en produkt är det förmodligen sant. | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej |
| När jag ser detta miljömärke, tror jag att uppgifterna är korrekta. | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej |
| Denna miljömärkningens riktlinjer och certifieringar är noggrant fastställda. | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej |
| Detta miljömärke är anpassat till dagens miljökrav. | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej |
| Med en bättre förståelse av denna miljömärkning, skulle jag vara villig att köpa fler produkter som har denna logotyp. | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej | Ja/Nej |

4. Allmän information

| Vad är din ålder? | □ □ |
| Vad är ditt kön? | □ Man □ Kvinna |
| Vilken är din nationalitet? | □ Svensk □ Annat, (ange)________________________ |
| Vad var din genomsnittliga månadsinkomst under det senaste året (inklusive CSN)? |
| □ ≤ 10 000 SEK | □ 10 001 - 20 000 SEK | □ 20 001 - 30 000 SEK |
| □ 30 001 - 40 000 SEK | □ ≥ 40 001 SEK |

Tack för din medverkan!
Appendix 3 – Semi-structured interview

Greeting and Introductory Questions

Thank you for participating in our study regarding Green consumer behavior and Eco-labels! The purpose of our study is to investigate the consumer’s ability to understand the message of an Eco-label and how this relates to their purchase behavior. Would it be alright for you if we recorded this interview so that we do not have to take notes while we are talking? The interview will be destroyed of course after we have transcribed them.

1. What is your current position?
2. How is your work related to Eco-labeling?
3. Do you view Eco-labeling as a tool for communication? If yes, how?

Main questions

4. What is the main message you are trying to convey with your Eco-label?
5. What percentage of Swedish citizens is aware of your Eco-label?
6. What are the common misconceptions that consumers have regarding your Eco-label?
7. What is your strategy for communicating the message of your Eco-label to consumers?
8. Are there similar Eco-labels on the market to yours?
9. How do you differentiate your Eco-label from the others on the market?
10. Do you feel that too many Eco-labels create confusion for the consumer?

Thank you for your time and help with our Master’s thesis!