









Reduce the Confusion: The influence of additional shelf information about eco-labels to compare green cosmetics





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Summary

Aim: In recent years consumers have become increasingly aware of the influence of their daily purchase behaviour on the environment and their health. As a consequence, the sale of natural products, especially natural cosmetics has increased. The purchase process of natural cosmetics is influenced by the presence of eco-labels, which informs the consumer about the impact on environment and health. Due to the popularity of natural cosmetics with an eco-label, a growing amount of companies use eco-labels on their packaging. Currently there are 60 different cosmetic eco-labels globally known and this amount is growing every day. Research shows that within this great amount of eco-labels, consumers are not able to distinguish the official and non-official eco-labels. This study focused on the reduction of problems in distinguishing the eco-labels by increasing the trust and knowledge about these labels.

Methodology: A pre-test and two main studies were conducted to test the influence of additional eco-label information on the purchase intention of eco-labelled cosmetics. The pre-test focused on the selection of stimulus materials for the main study. The main studies explored the influence of manipulations in brands, ecolabels and additional information. In the first main study, consumers' preference and purchase intention for single products on a shelf was investigated. In the second main study, the preference and purchase intention of consumers was measured during a choice task. Furthermore, the moderating influence of brand loyalty, ecolabel familiarity, eco-label knowledge, health awareness and environmental awareness was tested. **Results:** Analyses demonstrated that the consumers' purchase intention regarding eco-labelled cosmetics was influenced by the product preference of consumers. In this research the preference was given to cosmetics containing both trusted eco-labels and additional eco-label information. In addition, it turned out that familiarity with an eco-label, brand loyalty, health awareness and environmental awareness did not moderate the effect of brand, eco-label and additional information on the purchase intention of consumers. A moderating influence of eco-label knowledge on purchase intention was found.

Conclusion: The present study contributes to the understanding of the purchase intention of young female consumers of eco-labelled cosmetics. Educating consumers by additional eco-label information at the point-of-purchase increased the preference for a product. Especially brands which are seen as regular benefited from adding additional information by which consumers can compare different eco-labelled cosmetics.

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Introduction

With the strong trend towards sustainable consumption, the use of natural products has grown tremendously in the last decade (Ali & Said, 2012; Grankvist, Dahlstrand & Biel, 2004; Siekierski, 2008). Despite the economic crisis in most European countries and decreased spendings of consumers since the beginning of 2011 (Centraal Bureau voor de Statistiek [CBS], 2012), Kokoi (2011) claimed that consumers do not save money on environmental-friendly products. A majority of the European citizens (87%) share the opinion that their behavior can play an important role in protecting the environment and for that reason consumers are prepared to spend more money on environmental-friendly products (European Commission, 2011). Consumers who care about the environment also tend to care about the influence of products on their health (Kim & Seock, 2009). To reduce the negative environmental and health influence of products, consumers prefer buying natural products, ranging from food and clothes to cosmetics (Heino, 2012). Particularly the sale of environmentalfriendly cosmetics has increased exceptionally and is expected to grow until 2014 (Ferrer, Hidalgo, Kaps & Kougoulis, 2012). Because of the positive influences on both health and the environment, consumers are willing to spend more money on green cosmetics (Kokoi, 2011). More than half of the female consumers believe that these products are better for their body and are safer than traditional cosmetics (Annis, 2011; Cicia, Del Giudici & Ramunno, 2009; Hall, 2008; Pearson & Henryks, 2008). This research will use Annis' (2011) definition of traditional cosmetics: 'Cosmetics that do not indicate with words or images that the product is natural'. In contrast to traditional cosmetics, green cosmetics guarantee the product is natural. A detailed definition of green cosmetics, which will be used in this research, will be: 'Make-up, face, body or hair products which are used to colour, clean, hydrate or peel the body and can guarantee an environmental-friendly way of production' (Annis, 2011; Ecocert 2012).

As a consequence of the importance consumers put the influence on health and environment of cosmetic products, they are willing to pay a premium price for green cosmetics. An important aspect before consumers decide to pay a premium price for a natural cosmetic product is to make sure the brand and product are trustworthy in their claimed influence on health and environment. Over the recent years, eco-labels have become more prominent as a way to increase trust in brands and products. Eco-labels are a tool for supporting consumers in their decision for an environmental-friendly purchase (Thøgersen, 2000). The Global Eco-labelling Network [GEN] (2004) describes an eco-label as:

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A label which identifies overall environmental preference of a product (i.e. good or service) within a product category based on life cycle considerations. In contrast to a self-styled environmental symbol or claim statement developed by a manufacturer or service provider, an eco-label is awarded by an impartial third party to products that meet established environmental leadership criteria. (p. 2)

An eco-label will create a more positive attitude towards green products. Due to the positive attitudes regarding eco-labelled products, but also regarding the positive feeling about eco-labels in general, an increased amount of consumers are guided by eco-labels in their purchase decision (Heino, 2012; Nguyen & Du, 2010). Because of the popularity of eco-labelled cosmetics, different brands perceive the adoption of an eco-label as an opportunity to increase sales. As a consequence of this growing awareness of the benefits of an eco-label for cosmetic brands, the amount of products with eco-labels has increased enormously. Consumers are not able to distinguish the official and non-official eco-labels, which results in a decreased level of trust in eco-labels. Consumers do not know which label is certified by a third party and therefore can be trusted. The current cosmetic market also consists of non-official eco-labels, which state that a cosmetic product has green characteristics. Research shows that these stated green characteristics are not or not fully present in the product, resulting in a low level of trustworthiness in eco-labels (Gallastegui, 2002). The importance of increasing the level of trustworthiness in eco-label is shown by the influence on the purchase decision of ecolabeled products. In fact, trustworthiness is an essential aspect for consumers when it comes to purchasing eco-labeled products. Besides trust in a label, understanding a label is core to the effectiveness of an eco-label (Thøgersen, 2000). Multiple studies have shown that the correct understanding of eco-labels is currently insufficient. Consumers are not always able to interpret the eco-labels correctly (Gallastegui, 2002; D'Souza, Taghian, Lamp & Peretiatkos, 2006; Nguyen & Du, 2010; Nilsson, Tuncer & Thidell, 2004).

The current study will focus on the difficulties consumers' experience in distinguishing the different symbols of eco-labels. Due to a lack of knowledge about the meaning of eco-labels, they are not aware of the trustworthiness of the different symbols. By adding textual information on an eco-label, the understanding of a symbol which represents an eco-label and the attention a consumer pays to an eco-label will increase. Eventually additional information will influence the brand preference of consumers, which is an indication of the purchase intention of the consumers (Devlin, Gwynne & Ennew, 2002; Fishbein & Ajzen, 1975; Hellier, Geursen, Carr & Rickard, 2003). The results of this study contribute to the understanding of producers and retailers how to increase sales of eco-labelled cosmetics in a way so the brands are still perceived as trusted. In the context of green cosmetics, the following research question is formulated: *To what extent is additional ecolabel information about green cosmetics contributing to the purchase intention of young female consumers?*

Theoretical Background

In this chapter, past studies regarding the purchase behavior of (green) cosmetics and the influencing factors will be discussed. Firstly the purchase behavior of consumers of green cosmetics will be discussed. Secondly the influence of eco-labels on this purchase behavior will be discussed. The next section will discuss the role of trust in eco-labels, followed by the knowledge of consumers about eco-labels. Furthermore, the influence of health and environmental awareness, brand loyalty and familiarity with the eco-label will be discussed. Subsequently, past studies regarding point-of-purchase communication will be presented. The theoretical background will conclude with presenting the conceptual model.

Purchase Behavior of Green Cosmetics

The purchase decision for cosmetics is a very complex process. Based on the different product attributes, consumers make a decision about the benefits for their skin (Puth, Mostert & Ewing, 1999). Especially ingredients are one of the most important product attributes in choosing a cosmetic product. The performance of cosmetics as claimed on the product packaging is influenced by the ingredients of the cosmetics product (Keller, 1993; Kim & Seock, 2009). Because of the importance young women attach to their overall appearance, cosmetic products are frequently purchased by these young female consumers (Wu, Bennett, Ritz, Cassady, Lee & Hertz-Picciotto, 2010). In particular, young women in college, whose self-image is very important, pay a lot of attention to their physical appearance by using skin care products (Britton, 2012; Rudd & Lennon, 2000; The Nielsen Company, 2007). In recent years, more young consumers between the ages of 18-34 attach extra value to health and environment in purchasing consumer goods (Furlow & Knott, 2009). Consequently, young consumers are more interested in what they put on their skin compared to other agegroups. Consumers consider natural ingredients in cosmetics as good and healthy compared to traditional ingredients in cosmetics. Therefore, brands perceived as green can create a more positive public image, resulting in more advantages for green cosmetic brands in a way these brands can be positively distinguished from traditional cosmetic brands (Ginsberg & Bloom, 1994; Ratnasingham, 1998; Kim & Seock, 2009). The brand image can affect the satisfaction of consumers about the product use which results in an increased purchase intention and finally loyal consumers (Chen, 2010; Ginsberg & Bloom, 1994). There the following hypothesis is formulated for eco-labelled cosmetics:

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H1: Brands perceived as green will have a higher purchase intention compared to brands perceived as regular.

Purchasing a green cosmetic product, which is influenced by the preference and purchase intention of the consumer, is mainly determined by the presence of eco-labels (Devlin, Gwynne & Ennew, 2002; Ebrahim, 2010; Fishbein & Ajzen, 1975; Hellier, Geursen, Carr & Rickard, 2003; Organic Monitor, 2007). Furthermore, the attention a consumer pays to an eco-label is also important issue in purchasing green cosmetics containing ecolabels. Consumers who pay attention to an eco-label are more likely to purchase eco-labelled (cosmetic) products (Magistris & Gracia, 2012). The high amount of eco-labels combined with the lack of sufficient ecolabel information is a restriction for consumers to pay attention to the available eco-labels (Horne, 2009). For that reason an important first step in purchasing an eco-labelled product is catching the attention of the consumer. By increase the amount of information about eco-labels given to consumers at the point ofpurchase., the awareness of the influence of different eco-labelled goods on the environment will increase. As a consequence, additional information at the point-of-purchase will result in increased attention to an ecolabel and increased understanding of the eco-label (Nguyen & Du, 2010; Uniyal & Sinha, 2009). Furthermore, a study of Nguyen and Du (2010) about durable food shows the influence of the attention to an eco-label on the choice for eco-labelled products. The more attention consumers give to an eco-label on a food product, the more likelihood of purchasing the eco-labelled product. The influence of attention to an eco-label on the product packaging on a food product can also be expected in cosmetic products. Food products, as well as cosmetics, are seen as low-involvement products which entail minimal effort and consideration before a purchase decision (Low involvement product, n.d., Mueller, 2006). The preference for green cosmetics is shown to have an effect on both purchase and repurchase intentions of consumers (Devlin, Gwynne & Ennew, 2002; Ebrahim, 2010; Fishbein & Ajzen, 1975; Hellier, Geursen, Carr & Rickard, 2003). To discover in what way the purchase intention of consumers regarding eco-labelled cosmetics is influenced by the understanding of an eco-label, the attention to an eco-label and the preference for the product, the following hypothesis has been formulated:

H2: The purchase intention for eco-labelled cosmetics is positively influenced by the understanding of ecolabels, attention for eco-labels and product preference for eco-labelled products.

This research focusses on the influence of additional information about eco-labels at the point-of-purchase on

the final purchase intention. Based on research, especially in food, conveying information by combining visual and verbal information on a simple shelf label can influence the purchase decision (Manhoudt, Van de Ven, De Haes & De Snoo, 2002; Nordic Council of Ministers, 2001; Tang, Fryxell & Chow, 2004; Teisl, Peavey, Newman, Buono & Hermann, 2002; Thøgersen, 2000). The influence of a shelf label in food is also expected in cosmetics. Therefore the second hypothesis is formulated:

H3: Consumers who will see additional information about eco-labels at the point-of-purchase will have a higher purchase intention for eco-labelled cosmetics compared to consumers without the additional information.

Eco-label Classification

Eco-labels inform consumers about the environmental influence of a specific product (Rahbar & Wahid, 2011; Sherman, 2012). For about 80% of the European consumers, the environmental impact of a product is one of the most important aspects in their purchase decision (The Gallup Organisation, 2009). By getting more information about the environmental impact using eco-labels, the consumer can make a well-informed purchase decision (Sherman, 2012). In green cosmetics there are three main categories in eco-labels: sustainability, organic and natural. Sustainable eco-labels consider the whole life cycle of a product and the natural and organic ingredients. Examples of these labels are EcoCert (France) and BDIH (Germany) (see Appendix 1). The organic labels, such as Certified Organic from the United Stated Department of Agriculture (USDA), have standards for evaluating the environmental influence of the ingredients of a product. Furthermore the natural labels, such as NaTrue and the Natural Seal, look at the renewable sources (Golden, 2010). Within these three categories, both mandatory and voluntary labels can be distinguished:

- Mandatory labels are developed by governmental organisations, such as the European Union, and are prescribed by law (Horne, 2009).
- Voluntary labelling can be divided into three different categories; type I, type II and type III labels (International Standard Organization [ISO], 1999, 2000, 2001; Horne, 2009; Grundey, 2009):
 - Type I labels: these labels are certified by third parties and are used within one country or region.
 These labels can be recognized by using simple symbols. Most consumers think these labels are very clear and that they provide a lot of information at the point of sale.

- Type II labels: these labels are not officially certified, but are based on self-declarations of retailers
 or manufacturers and for that reason can be seen as a way of advertising. Most of the time, these
 labels are not scientifically based and for that reason they are often quite unclear for consumers.
- Type III labels: these labels provide qualitative information behind the environmental symbols and about the life cycle of a product in a very extensive format. The type III labels are used less compared to type II and type I labels (Horne, 2009).

Eco-labels are used by consumers and manufacturers for different purposes. Consumers acquire more information about the effects of their behavior on the environment. By using eco-labels, environmentally friendly consumption behavior will be stimulated. Manufacturers will also be motivated to constrain the environmental impact of their products (Gallastegui, 2002). Large manufacturers of cosmetic products, such as L'Oreal, Proctor and Gamble, Kneipp and Beiersdorf are investing an increasing amount of money in the production and marketing of green cosmetics (Heino, 2012). To distinguish the green cosmetics from the traditional cosmetics, the green products will be certified by type II labels. For example, Beiersdorf's Nivea introduced Nivea Pure & Natural in 2012 including a label on their package (Nivea 2012).

Consumers' attention to these eco-labels depends on different aspects. Understanding a label, trust in a label and recognition by paying attention to a label, are important in influencing the effect of an eco-label on purchase behavior (Thøgersen, 2000).

Perceived trustworthiness

The way eco-labels influence the green buying behavior of consumers depends on the perceived trustworthiness of eco-labels (Sønderskov & Daugbjerg, 2011). Before a consumer will pay attention to an eco-label, it is important that the information conveyed through this label is trusted (Thøgersen, 2000). The eco-label will be used in the decision-making when the consumer considers the information as trusted (Thøgersen 2000). The influence of the perceived trustworthiness of an eco-label on the final purchase intention will be tested by the following hypothesis:

H4: Consumers will have a higher purchase intention for high trusted cosmetic eco-labels compared to cosmetics with low trusted eco-labels on the product packaging.

Another aspect which plays a significant role in the trust of an eco-label and the preference for ecolabelled products is the credibility of the source behind the eco-label. The different types of eco-labels (type I, II and III) are all certified by different organizations (governments, retailers and environmental organizations respectively). These organizations influence the credibility of an eco-label. Gertz (2005) shows that consumer or environmental organizations are seen as most credible, independent organizations are ranked second, governments were ranked third and retailers were seen as the least credible. The influence of the perceived trustworthiness of independent organizations in labelling ecological products is also confirmed by other studies (Schlegelmilch, Bohlen, & Diamantopoulos, 1996). A main problem in eco-labelling is the lack of knowledge about the meaning of eco-labels, as well as the source of the eco-labels. For effective eco-label use in the cosmetic market, the amount of consumers' eco-label knowledge is important.

Eco-label Knowledge

The effectiveness of an eco-label depends on different factors: the way ecological information is presented and the ability of the consumer to read the ecological information and act on it (Teisl, Rubin & Noblet, 2008). An eco-label will be successful when it catches the attention of the consumer and lead to a purchase decision. Consumers will pay attention to a label when they have sufficient knowledge about the design and the meaning of the label (Nguyen & Du, 2010).

Multiple studies show that consumers misinterpret eco-labels (D'Souza, Taghian, Lamp & Peretiatkos, 2006; Nordic Council of Ministers, 2001b). Consumers have problems in understanding the information stated and in distinguishing between the meaning of the different labels (D'Souza, Taghian & Lamb, 2006; Nguyen & Du, 2010; Nilsson, Tunçer & Thidell, 2004). On the one hand, eco-labels need to be simple to stimulate the purchase decision. On the other hand consumers need some information to understand the eco-label. Horne (2009) suggests that an eco-label needs to contain information about the influence of the consumption on the environment.

To increase the knowledge of eco-labels and consequently the understanding and the intention to buy eco-labelled products, educating the consumer will be necessary (Cheah & Phau, 2011; Laroche, Bergeron & Barbaro-Forleo, 2001). More information about eco-labels can result in higher knowledge of eco-labelled products among consumers in a way the purchase decision will be influenced (Gracia & Magistris, 2008).

Important in conveying information to consumers is the different amounts of knowledge consumers have beforehand. Different studies reviewed by Uniyal & Sinha (2009) show that knowledgeable consumers will have more attention for new information given at the point-of-sale. They will actively seek to a greater amount of information and will be more aware of the available information compared to less knowledgeable consumers. From this, the assumption can be made that the amount of knowledge about the eco-labels influences the purchase intention of eco-labelled products. The next hypothesis is formulated as follows:

H5: The relation between the presence of additional eco-label information and the purchase intention is positively influenced by consumers' knowledge about the eco-label.

Besides knowledge about the meaning of symbols which represent eco-labels, health and environmental awareness also influence the attention paid to eco-labels. If a consumer doesn't value protecting the environment, it will be unlikely that a consumer pays attention to an eco-label (Kim & Seock, 2009; Ölander & Thøgersen, 1995; Stern, Dietz, Abel, Guagnano, & Kalof, 1999; Thøgersen, 2000).

Health and Environmental Awareness

Since the beginning of the 21st century the environmental awareness of consumers has increased tremendously (Baik & Suk, 2010; Greendex, 2012; Rawat & Garga, 2012). Due to the attention of ecological organizations to the influence of harmful ingredients in consumer's products on the environment, a majority of the consumers realized that both their purchase behavior and consuming behavior impact the environment (Laroche, Bergeron & Barbaro-Forleo, 2001; Boduka & Pierret, 2011). As a consequence of this growing environmental awareness, the product preference of consumers has changed to green products (Greendex, 2010). This is especially the case for durable products which have limited or no negative influence on the environment (Akehurst, Afonso & Goncalves, 2012).

Besides the influence of consumer lifestyle on the environment, awareness of the influence of the product ingredients on consumers' health has also increased. Growing concerns about health and environment results a higher preference for cosmetics that maintain or promote a healthy lifestyle by containing ingredients which are beneficial for the skin (Kim & Chung, 2011; Rezai, Teng, Mohamed & Shamsudin, 2012). Aside from the increasing concern about the effects of ingredients on health and skin, research by Kim and Seock (2009) indicates that the environmental influence has the strongest impact on the preference for cosmetics. Most

consumers prefer cosmetics without pesticides or synthetic chemicals and which will not negatively influence the environment (Rawat & Garga, 2012). In contrast to the study of Kim and Seock (2009), multiple studies indicate that both the environmental influence and the health influence are important in the purchase decision (Zakowska-Biemans, 2011; Padel & Foster, 2005; Schifferstein & Oude Ophuis, 1998).

Increased positive feelings and more confidence in the price and the quality of the ingredients regarding green products have been shown to be the effect of a high environmental awareness (Lin & Huang, 2012). Lin & Huang (2012) have demonstrated that consumers with a high awareness of the environment are more inclined to purchase green products. Along with the growing environmental awareness of consumers, awareness about the effects of cosmetic ingredients on the skin has also increased (Kim & Seock, 2009). The moderating influences of both environmental and health awareness are the focus in this study. The assumption is made that consumer awareness about health and the environment has a moderating influences on the relation between the independent variables in this research (brand, trust in eco-labels and eco-label knowledge) and the purchase intention of eco-labelled cosmetics:

- H6: The relation between the naturalness of a cosmetic brand and the purchase intention is positively influenced by consumers' health and environmental awareness.
- H7: The relation between trust in eco-labels and purchase intention is positively influenced by consumers' health and environmental awareness.
- H8: The relation between eco-label information and the purchase intention is positively influenced by consumers' health and environmental awareness.

The purchase intention of eco-labelled cosmetics is also expected to be influenced by the loyalty of the consumer towards the brand. Loyal consumers appear to be less sensitive for marketing activities at the point-of-purchase (e.g., shelf labels, point-of-sale displays) and in that way loyalty will constrain the impact of both environmental awareness and trust in eco-labels.

Brand Loyalty

Each brand puts an enormous amount of effort into changing every incidental consumer into a valuable loyal consumer. The advantages of brand loyal consumers have been well described by Yousaf, Zulfiqar, Aslam and Altaf (2012): "Brand loyalty is a power of brand earned over time by its goodwill and name

recognition which increases its sales volume and higher profit margins against competing brands" (p. 328). The sales and margins of a brand with high brand loyal consumers will increase due to routine purchase behavior. Loyal consumers will keep the brand continuously in mind while shopping, which will result in a small chance of switching to other brands (Hanzaee & Andervazh, 2012; Yoo, Donthu & Lee, 2000). Furthermore the positive attitude loyal consumers have towards a particular brand over the competing brands will also reduce the chance of brand switching. Based on the findings by Yoo, Donthu and Lee (2000) and Hanzaee and Andervazh (2012) it can be assumed that loyal brand consumers will be less influenced by marketing activities compared to less loyal brand consumers. Lee, Chen, Huang and Hsu (2010) support this assumption with the findings that loyal brand consumers will purchase more products, independent of marketing activity. Especially for green products, loyal consumers will buy a higher amount of products and are also willing to pay a higher price for their preferred products. Lee et al. (2010) found that highly loyal consumers in green food attach more importance to the characteristics of the product and are especially concerned about the presence of eco-labels and safety of the products. The moderating influence of brand loyalty on eco-labelled cosmetics will be tested by the following hypothesis:

H9: The relation between the perceived naturalness of a brand and the purchase intention is negatively influenced by brand loyalty.

Besides brand loyalty, the ability to recall an eco-label from the past, described as familiarity, is also suggested to be important in purchasing eco-labelled cosmetics.

Familiarity With an Eco-Label

The growing number of eco-labels in green cosmetics ensures that consumers need to use different information sources in their purchase decision. Using eco-labels is an important information source in purchasing green cosmetics. An important prerequisite for the use of eco-labels in the purchase decision of green cosmetics, is the familiarity with an eco-label (Hanss & Böhm, 2011). The familiarity with an eco-label is described by Alba and Hutchinson (1987) as the amount of experiences with an eco-label. Research by Klöckner (2012) and Hanss and Böhm (2011) indicate that familiarity of consumers with eco-labels affects the perceived sustainability of a product, which eventually influences the attention paid to an eco-label and the purchase decision of the consumer about eco-labelled products. An increased exposure to eco-labels has been shown to increase the familiarity with an eco-label (Obermiller, 1985). Familiar eco-labels evoke positive associations with the eco-label (Keller, 1993). Research in food by Klöckner (2012) demonstrated that the positive image of the eco-label affects the perceived trustworthiness of the eco-label. The moderating influence of eco-label familiarity on both the perceived trustworthiness of eco-labels and the final purchase decision of eco-labelled cosmetics is tested as follows:

H10: The relation between trust in eco-labels and purchase intention is positively influenced by eco-label familiarity

The expected influence of evoked positive feelings when consumers are confronted with products containing an eco-label, demonstrate the importance of making consumers get familiar with eco-labels. A great possibility to increase the familiarity with eco-labels, is by standing out at the point of purchase in a way consumers remember the eco-label. A great possibility to influence purchasing eco-labelled cosmetics, is by point-ofpurchase communication at the shelf (Lefébure & Muñoz, 2011).

The Role of Point-of-Purchase Communication

Most consumers do not decide to buy a product until they arrive at the point of sale. In 2012, 76% of consumer decisions were made at the point-of-purchase (Point Of Purchase Advertising Institute, 2012). The great amount of cosmetics at the point of purchase, makes it important to distinguish a traditional cosmetic product from a green cosmetic product. The most important aspect in which green cosmetics can distinguish themselves from traditional brands is by conveying more information to the consumer. It is important for consumers to understand the information given by the green brand by having the capacity to process the additional information. More information about the green features of a product is not always the best strategy because of the possibility of information overload, distraction and in this way a lack of attention to this information (Milosavljevic & Cerf, 2008; Scammon, 1977). For that reason simplicity is an important condition for effective communication to consumers about the influence on health and environment (Horne, 2009). Adding an eco-label to the product packaging is an effective and simple way of conveying environmental and health information (Lohr, 1998). Informing consumers by using visual stimuli is more effective and influential compared to verbal stimuli. Visual aspects, such as eco-labels, communicate directly and quickly to consumers at the point of purchase (Erdelyi & Kleinbard, 1978).

Although eco-labels are a good way to convey environmental and health information, consumers also experience some problems in understanding this visual information. A research by the Nordic Council of Ministers (2001) shows that because of a lack of understanding, consumers prefer verbal product information in text instead of symbols/labels. Because symbols are sometimes difficult to understand and should not stand alone, research suggest that a combination of symbol and text can solve this misunderstanding (Manhoudt, Van de Ven, De Haes & De Snoo, 2002; Nordic Council of Ministers, 2001; Tang, Fryxell & Chow, 2004; Teisl, Peavey, Newman, Buono & Hermann, 2002; Thøgersen, 2000). Shelf labels have been shown to be an effective method for conveying more information to consumers. Especially in food, nutrition information on shelf labels can provide more useful information and can influence the purchase decision of consumers. In quick decision environments, like grocery stores, it may be important to use simple labels with a small amount of information (Feunekes, Gortemaker, Willems, Lion & Van den Kommer, 2008; Berning, Chouinard, Manning, McCluskey & Sprott, 2010). Complex, incomprehensible or incorrect information can complicate the purchase decision (Hansen, 2008; Ellen, 1994). For clear decision, simple eco-label information is important. Horne (2009) indicated that consumers see simplicity in eco-label information as consistency in criteria in a way consumers can compare the different labels at the point of purchase. Another important aspect in comparing different eco-labels to make a well-informed purchase was mentioned by Teisl et al. (2002), who demonstrated that ecolabel information need to be relevant for the consumer before attention is paid to the information.

Besides simplicity, relevance and motivation, knowledge of consumers is an important aspect. For an effective use of the information on the shelf label, a research in nutrition by Hoefkens, Pieniak, Van Camp and Verbeke (2012) concluded that consumers should be motivated to use the information and consumers should have a great amount of objective knowledge about the product. An important condition before paying attention to the shelf label and use that information, is the level of trust a consumer has in the information on the shelf label (Verbeke, 2008). The question which arises here is the influence of knowledge consumers have about both labels and the trust they have in eco-labels on the final purchase intention of cosmetics.

Conceptual Model

In this research, a conceptual model (see Figure 1) has been developed which presents the influence of knowledge about eco-labels, the perceived trustworthiness of an eco-label and the influence of kind of brand,

seen by consumers as natural or regular, on the use of information on a shelf label measured by the understanding of the given information and the attention paid to an eco-label as a consequence of the understanding. This understanding and attention will influence the product preference and the purchase intention of the consumer. The moderating variable focuses on the impact of brand loyalty of the consumer, eco-label knowledge, the familiarity with the eco-label and the motivation to pay attention to an eco-label; the health and environmental awareness [HEA] on the final purchase intention of the consumer.

The present study focused on testing the conceptual model in the cosmetic sector with the focus on skin care. The effects of manipulations in the perceived trustworthiness of eco-labels, the naturalness of the brands and the presence of additional information on the final choice of consumers were measured in three studies. In the pre-test, eco-labels, brands and verbal claims regarding eco-labels were selected by the participants. Based on the selected brands in the pre-test, two different product categories within skin care were selected for the main studies. In study 1, participants were asked to evaluate twelve manipulated product images in each product category. Study 2 focused on the choice consumers made at the point-of-purchase by using an online choice task containing the products from study 1 (Gracia & De-Magistris, 2013).



Figure 1. Conceptual model.

Pre-test

Method

Participants. Women between 18-25 years were the focus group in this study on the account of the interest of young highly-educated women in cosmetics and the influence of their purchase and consumer behavior on health and environment. Young female adults (N = 19) with a mean age of 22.79 years (SD = 2.46) were recruited for the pre-test via social media and e-mail). The majority of the participants (78.9%) were highly educated (college/university).

Materials. A selection of stimulus material for the main study was conducted in an online questionnaire. Based on research by De Pelsmacker, Janssens, Sterckx and Mielants (2005) 12 different personal-care brands available in grocery stores and well-known drugstores in the Netherlands (Kruidvat, Trekpleister, Etos & DA) were selected for this research. Furthermore, type I and type II cosmetic eco-labels available in the Netherlands were selected, from which the trustworthiness was assessed. Additional to the purpose of selecting brands and eco-labels for the main study, the pre-test focused on the importance of verbal claims in purchasing eco-labeled personal-care products. A selection of 19 verbal claims was made based on past studies and characteristics of existing cosmetic eco-labels to be used as general evaluation criteria for eco-labels in the main study (see Appendix 2).

Instruments. The pre-test focused on both selecting the stimulus material for the main study and testing the reliability of the scales and questions used in the main study (see Appendix 5). First, participants were asked to give their opinion about regular versus natural brands, the perceived trustworthiness of eco-labels and the importance of verbal claims in personal-care products.

Opinion about regular vs. natural brands. The participants were presented with twelve brands of cosmetic products, both regular and natural, and were asked to indicate on a 7-point Likert scale the naturalness of the product (1= very regular; 7 = very natural). Based on this pre-test, the most natural and the most regular brand were selected to be used in the main study.

Perceived trustworthiness of eco-labels. The participants were asked to rank 12 different eco-labels in a sort card task according to the level of perceived trustworthiness. The eco-labels which were perceived as most and least trustworthy were selected for the main study.

Importance of verbal claims. Participants were asked about the most important aspects in purchasing

eco-labeled cosmetics by indicating the importance of 19 statements (see Table 1), on a 7-point Likert scale (1= not at all important, 7= extremely important).

The second section of the questionnaire consisted of both dependent and independent variables which were measured in the main study. The measures of environmental awareness, health awareness, brand loyalty, eco-label knowledge, familiarity, understanding, product preference and purchase intention were all based on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree).

Environmental awareness. The scale for environmental awareness consisted of items from Kim and Seock (2009) and Grunert and Juhl (1995). The final environmental awareness scale used in the questionnaire of the pre-test consisted of 10 items.

Health awareness. Health awareness was assessed by the 9-item scale of Schifferstein and Oude Ophuis (1998) focusing on the importance of health and sickness for consumers.

Brand loyalty. Chaudhuri and Holbrook (2001) used a 7-point Likert scale containing four items for measuring brand loyalty, which was also used in this study.

Familiarity with the eco-label. The familiarity of a participant with an eco-label was measured by a single question focussing on the familiarity with the label before starting this study: 'I was already familiar with this eco-label before this research'.

Understanding an eco-label. Based on research by Feunekes et al. (2008) understanding the eco-label shown to the participants was measured by one question: 'This eco-label is easy to understand'.

Product preference. The preference for a product was measured by one statement 'When searching for a natural cosmetic product, I would choose this product', based on research by Grankvist, Dahlstrand and Biel (2004).

Eco-label knowledge. Based on multiple studies (Lee et al., 2010; Laroche, Bergeron & Barbaro-Forleo, 2001) in environmental knowledge, defined as "What people know about the environment, key relationships leading to environmental aspects or impacts, an appreciation of 'whole systems', and collective responsibilities necessary for sustainable development" (Mostafa, 2007, p. 221), a new construct was developed, known as *eco-label knowledge*. It was measured by nine items which focused on both factual knowledge and perceived knowledge about eco-labels

Purchase intention. The intention to buy an eco-labelled product after seeing it on the computer

screen was measured by two questions ('I will buy and use eco-labelled cosmetics' and 'I will recommend others to buy and use eco-labelled cosmetics') based on research by Ramayah, Lee, and Mohamad (2010).

Procedure. The online questionnaire was improved in response to the feedback of a test user, after which participants were invited to fill in the final survey. Before starting the questionnaire, the participants were informed about the main topic of the study; personal-care products. In the introduction of the questionnaire first the definition of personal-care products was explained, after which the questions were presented on the screen. The questionnaire concluded with five questions regarding demographic information and the interest of the participants to be informed about the results of the study afterwards.

Analysis. Analysing data from the pre-test was crucial for setting up the main study. A main focus was on testing the perceived trustworthiness of the different eco-labels, the image of personal-care brands and the importance participants attached to verbal natural claims on product packaging. Furthermore the pre-test focused on the reliability of the different scales used in the main study.

Outcomes

Eco-labels. The perceived trustworthiness of 12 eco-labels in the personal-care sector was analysed by comparing means of the perceived trustworthiness of the participants in the eco-labels. Based on this comparison two eco-labels, which were perceived as most trustworthy, and least trustworthy were selected to be used in the main study (see Figure 2). Eco-label A (Sanex Formule Biogredable) was considered most trustful (M = 7.64, SD = 2.89) and eco-label B (Leaping Bunny) was considered as least trustful (M = 5.35, SD = 3.36).



Figure 2. Eco-labels perceived as most trustful and least trustful by participants in the pre-test.

Brands. Participants were also confronted with 12 personal-care brands and asked to assess the naturalness of the different brands on a 7-point scale (1= natural brand; 7 = regular brand). From the 12 brands, L'Oreal Paris was seen as most regular (M = 5.72, SD = 1.24) and Biotherm as most natural (M = 2.36, SD = 1.35). These brands were used in the main study.

Additional information. The main study focused on the effect of additional shelf information in a drugstore. For that reason the importance of 19 different existing verbal claims were tested in the pre-test. Based on the mean scores of the importance of different claims, a ranking was made (Table 1). For the main studies, the most important verbal claims were translated into four categories which are used in the main study.

Table 1

Number in ranking	Verbal claim	Mean
1	Safe for the skin	6.26
2	Safe	5.85
3	Good for the health	5.67
4	No animal testing	5.11
5	No irradiation in the end product	4.74
6	A part of the ingredients come from natural origin	4.67
7	No animal-derived ingredients used in the products	4.48
8	Vegetable ingredients	4.19
9	No synthetic fragrances and colours	4.15
10	Influence of the production process on the environment	4.07
11	Ingredients manufactured by environmentally friendly processes.	3.89
12	No parabens (synthetic preservatives)	3.85
13	No synthetic chemicals	3.85
14	The use of ingredients derived from renewable resources	3.81
15	No genetically modified ingredients	3.70
16	No petroleum derived products (mineral oils)	3.59
17	No silicone oils	3.59
18	The recyclable nature of packaging	3.37
19	Package is made of recycled materials	3.19

Ranking of Importance of Verbal Claims Based on Mean Scores in the Pre-test

Note. Translated from Dutch by the author

Reliability of scales. In the main study the selected stimulus materials from the pre-test were used. Furthermore, the pre-test was also used for testing the reliability of the different scales used in the main questionnaire. Based on past studies some existing scales were used in this study. Both the brand loyalty scale and the purchase intention scale were found to be reliable. Brand loyalty, which consisted of four items, was measured for two selected personal-care brands (Biotherm: $\alpha = .745$; Nivea = .843). Purchase intention, measured on two items, was also measured for two personal-care products (Kneipp Body lotion Citrus: α = .822; Nivea Pure & Natural Body Milk: α = .847). Another scale constructed, based on different past studies, was eco-label knowledge. This scale consists of 10 items and was measured for two selected eco-labels (Leaping Bunny: α = .924; Cosmebio BIO: α = .954).

For measuring the health and environmental awareness, two existing scales were combined into one scale. The Cronbach's alpha for this scale (19 items) was low ($\alpha = .26$). Based on this reliability level, the health and environmental scale was split into two different scales. The scale which measured environmental awareness consisted of 10 items. When removing one item, the Cronbach's alpha increased ($\alpha = .74$). In contrast to the reliability of the scale of environmental awareness which increased as a consequence of deleting an item, the scale which measured health awareness was still very low (9 items; $\alpha = .09$). Thus this scale for health awareness was replaced in the main study by an existing scale for health awareness, constructed by Hong (2009), consisting of 11 items ($\alpha = .85$).

In Sum

The results of the pre-test were the basis for the stimulus materials in the main study. Out of 12 ecolabels two different eco-labels were selected, based on their perceived trustworthiness. The most trusted ecolabel (eco-label A) was a type II eco-label (non-official), developed by Sanex. The eco-label which was seen as least trusted (eco-label B), was a type I eco-label, known as 'Leaping Bunny'. Furthermore, out of 12 brands in personal-care, two were selected, from which L'Oreal Paris was seen as most regular and Biotherm as most natural. Third, claims were selected which were important for consumers in choosing personal-care products. To increase the effectiveness of an eco-label and for that reason enable consumers to differentiate eco-labelled products (Lee & Geistfeld, 1998), four attributes had been selected which appeared to be important for consumers (influence on skin, influence on health, the presence of natural ingredients and the animal welfare during the production process). To help consumers making a well-informed decision, the information needs to be short and transparent in a way consumers can compare different eco-labels (Sherman, 2012; Teisl, 2003; Teisl et al., 2002). To prevent any confusion, the most important claims presented to the participants in the pre-test were summarized in four general attributes which were displayed on the shelf label; skin, health, naturalness, animal welfare. The two selected eco-labels were assessed on the four attributes and the results were displayed on the shelf label in the main study. In addition to selecting the stimulus material for the main study, the scales for the different constructs were tested in the pre-test. Based on the Cronbach's alpha, the scale which measured health awareness had to be replaced by a scale with a higher reliability.

Study 1

Method

A 2 (Brand: regular vs. natural) x 3 (Eco-label: trusted vs. not trusted vs. no label) x 2 (Information: additional vs. no additional) x 2 (Product category: bronzing body lotion vs. regular body lotion) design was used for testing the evaluations of 24 single products. The products were manipulated according to the ecolabel, the naturalness of the brand, the presence of additional information and the product category. The manipulated products were divided into two conditions, based on the product category (bronzing vs. regular). The participants were assigned to each of the two conditions to evaluate the 12 manipulated products images.

Participants. Participants were female students from a university in the east of the Netherlands. Twelve participants were not in the target group, because of their lower level of education. These participants, together with the missing data were removed from the dataset. The 122 participated female students had a mean age of 21.62 (SD = 2.46) years and were studying both alpha and beta studies. From the participants 38.9% were studying behavioural sciences, 26.5% were studying technical studies, 15.0% health studies and 9.8% were studying economics.

Materials. Two personal-care brands were selected, from which Biotherm was seen as most natural and L'Oreal Paris was seen as most regular. Within both brands two similar products were selected to investigate. Skin-care products had been demonstrated to be very popular among young women (Annis, 2011; Furlow & Knott, 2009), which resulted in the selection of two similar skin care products from each brand to be used in the main study; bronzing body lotion and regular body lotion. To constrain the impact of other irrelevant package elements during the main study, the design of the product packages was changed. The product packaging of the bronzing body lotion was changed by adding the claim 'Sublime Bronze' on both packages. The claim 'New Formula' was added on the product packaging of the regular body lotions.

The presence of an eco-label (trusted vs. not trusted vs. no label) and the presence of additional information (additional information vs. no additional information) was manipulated on these the two different skin-care products from both Biotherm and L'Oreal Paris. In Figure 3 an example can be found of two manipulated products from Biotherm (regular vs. bronzing body lotion) and two manipulated products from L'Oreal Paris (regular vs. bronzing body lotion) used in study 1.



Figure 3. Examples of stimulus material in study 1.

Instruments. In the main study, the questionnaire contained both constructs with multiple questions and single questions. Study 1 contained nine constructs in total, from which understanding the eco-label, the product preference and familiarity with the eco-label were measured by single statements on which participants could indicate on a 7-point Likert scale to what extent they agreed (1 = strongly disagree, 7 = strongly agree). To measure recognition of the eco-labels, participants were asked to indicate which of the 12 presented eco-labels were seen on the product packages in the study. Furthermore, purchase intention, brand loyalty, eco-label knowledge, health awareness and environmental awareness were measured by multiple statements on which participants could indicate on a 7-point Likert scale to what extent they agreed with the different statements (see Appendix 10).

Measuring health awareness in study 1 was deviated from the statements which measured health awareness in the pre-test (α = .085). For that reason ten other items were constructed to measure health awareness in study 1 (Hong, 2009), with a high Cronbach's alpha (see Table 2).

Table 2 Reliability of Constructs in Study 1

Construct	α
Health awareness (10 items)	.88* (N = 119)
Environmental awareness (9 items)	.78* (N = 119)
Purchase intention (2 items)	.90 (<i>N</i> = 121)
Eco-label knowledge (11 items)	.90 (<i>N</i> = 120)
Brand loyalty (4 items)	.92 (<i>N</i> = 121)

* When deleting item 8

Procedure. Participants were actively recruited for the online questionnaire in multiple ways, by sending email invitations, using online social networks, posting on Dutch online message boards or via advertisement at the university. To increase the response, participants were also recruited in person to fill in the questionnaire offline.

The recruited participants were randomly assigned to one of the two conditions (body lotion or bronzing body lotion), in which they were confronted with a total of 12 products, see Appendix 3 Starting the questionnaire, participants were first asked to read an introduction text about the main goal of the questionnaire. In this introduction the definition of personal care products was explained, to make sure that participants understood the concept well. Next, the participants were confronted with the 12 skin-care products from the two selected personal-care brands: Biotherm and L'Oreal Paris. After answering questions about product preference and purchase intention for each of the 12 products, the questionnaire was concluded by questions about *understanding the eco-labels, the attention paid to the eco-labels, environmental awareness, health awareness, brand loyalty, familiarity* and *the knowledge about eco-labels* (see Appendixes 3 for details of the questionnaire). The final questions of the questionnaire focused on collecting demographic data, with questions about sex, age, education level and type of education.

Analyses. The focus in study 1 was on analysing the evaluations of the 12 manipulated products and testing the new formulated construct; health awareness. First, all participants who had a lower education level than university were removed from the dataset. Second, the remaining data consisting of 1464 (12 x 122) observations, started with measuring a Pearson correlation coefficient to test the relationship between health and environmental awareness. Third, the dataset was analysed by using ANOVAs to test the main and interaction effects of brand, eco-label and additional information for both scores on product preference and purchase intention. Fourth, the extent to which purchase intention was influenced by understanding an eco-label, the attention paid to an eco-label and the product preference was the final analysis by measuring the correlation coefficient between the different variables.

Results

Table 3

Product preference. The relationship between the new scale of health awareness and environmental awareness was investigated using Pearson correlation. There was a moderate relationship between the two variables, r = .43, p < .001, which indicate that individuals with high levels of health awareness tend to have high levels of environmental awareness. The scores of health awareness (M = 4.67, SD = .89) were much higher compared to the scores of environmental awareness (M = 2.83, SD = .73). For that reason the two variables cannot be transformed into one variable, as also suggested in the pre-test.

A factorial between groups analysis of variance (ANOVA) was used to investigate the effects of brand, additional information and trust in eco-labels on the product preference. In Table 3 the mean scores of product preference can be found as a function of eco-label, brand and additional information.

	5	, ,	,	
	Additional information		No Additional Information	on
	M (SD)	Ν	M (SD)	Ν
Natural Brand				
Eco-label A	4.11 (1.73)	121	3.78 (1.42)	122
Eco-label B	3.83 (1.60)	121	3.88 (1.51)	122
No label	3.66(1.57)	122	3.25 (1.40)	122
Regular Brand				
Eco-label A	4.27 (1.44)	121	3.39 (1.42)	122
Eco-label B	3.71 (1.59)	122	3.55 (1.43)	122
No label	3.32 (1.51)	121	3.46 (1.53)	121

Mean scores and Standard Deviation for Product Preference for Study 1

The ANOVA revealed that brand (F(1, 1447) = 2.84, p = .09) did not influenced the product preference. Both eco-labels (*F*(2, 1447) = 11.73, p < .01, $\eta_p^2 = .02$) and additional information (*F*(1, 1447) = 11.28, p < .01, $\eta_p^2 = .01$) influenced product preference. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for products with the trusted eco-label (*M* = 3.89, *SD* = .07) and with the not-trusted eco-label (*M* = 3.74, *SD* = .07) was significantly different from the products without an eco-label (*M* = 3.43, *SD* = .07). Furthermore, a Tukey HSD test indicated that products containing additional information (*M* = 3.82, *SD* = .06) was significantly different from the products of *M* = 3.55, *SD* = .06)

The eco-label x additional information interaction effect ($F(2, 1447) = 4.72, p = .01, \eta_p^2 = .01$) was also significant (see Figure 4). The effect of additional information on product preference was more pronounced when the eco-label was trusted t(484) = 4.43, p < .001, than when the eco-label was not-trusted t(485) = .41, p = .69, or no label was present t(484) = .99, p = .32. An independent-samples t-test demonstrated that the preference for products with a trusted eco-label was higher if additional information was present (M = 4.19, SD = 1.59) compared to products without additional information (M = 3.58, SD = 1.43).



Figure 4. Product preference as a function of eco-label and additional information in study 1.

The eco-label x brand interaction effect was not significant, which that the effects of an eco-label on product preference was not dependent of the brand, F(2, 1447) = .33, p = .72. Furthermore, the brand x additional information interaction was not statistically significant, F(1, 1447) = .22, p = .64. A significant effect

was found for brand x additional information x eco-label interaction, F(2, 1447) = 4.26, p < .01, $\eta_p^2 = .01$), which can be seen in Figure 5. This indicated that changes in product preference are dependent on both the brand of the product, the perceived trustworthiness of an eco-label and the presence of additional information.



Figure 5. Product preference as a function of brand, eco-label and additional information in study 1.

Simple effect analyses were used to further examine the three-way interaction between eco-label and brand on product preference for products with and without additional information (see Table 4). These analyses indicated that the effect of additional information is dependent of the presence of an (trusted) eco-label. The eco-label significantly affected product preference when the additional information was both present (F(2, 722) = 12.05, p < .01, $\eta_p^2 = .03$) and not present (F(2, 725) = 3.70, p = .03, $\eta_p^2 = .01$). Furthermore, the influence of the brand was demonstrated to not significantly affect product preference when additional information is present (F(1, 722) = 1.70, p = .41) or not present (F(1, 722) = 2.55, p = .11).

Table 4				
Mean Scores and Standard Deviation	for Product Pre	ference	for Study	1/

	M (SD)	N
Additional Information		
Eco-label A (trusted)	4.19 (.10)	242
Eco-label B (not-trusted)	3.77 (.10)	243
No label	3.49 (.10)	243
No additional Information		
Eco-label A (trusted)	3.58 (.09)	244
Eco-label B (not-trusted)	3.71 (.09)	244
No label	3.36 (.09)	243

Purchase intention. A second factorial between groups analysis of variance (ANOVA) was used to investigate the effects of brand, additional information and trust in eco-labels on the purchase intention. Table 5 shows the mean scores of purchase intention as a function of eco-label, brand and additional information.

	Additional information		No Additional Information	
	M (SD)	Ν	M (SD)	N
Natural Brand				
Eco-label A	3.62 (1.52)	121	3.53 (1.34)	122
Eco-label B	3.50 (1.44)	121	3.46 (1.39)	122
No label	3.36 (1.47)	122	3.05 (1.37)	95
Regular Brand				
Eco-label A	3.76 (1.40)	121	3.36 (1.38)	122
Eco-label B	3.46 (1.45)	122	3.30 (1.33)	122
No label	3.26 (1.42)	121	3.43 (1.48)	121

Table 5		
Mean Scores and Standard Deviation	for Purchase Intention	for Study 1

The ANOVA revealed that neither brand (*F*(1, 1420) = .01, *p* = .94) nor additional information (*F*(1, 1420) = 3.40, *p* = .07) influenced purchase intention. Eco-label was found to influence purchase intention, *F*(2, 1420) = 4.97, *p* < .01, η_p^2 = .002. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for products with the trusted eco-label (*M* = 3.57, *SD* = .06) was significantly different from the products without an eco-label (*M* = 3.28, *SD* = .07). However, the effect of an eco-label on purchase intention was not dependent on the brand (*F*(2, 1420) = .86, *p* = .42). In addition, the additional information x eco-label interaction (*F*(2, 1420) = .55, *p* = .58) and the additional information x brand interaction were not significant (*F*(1, 1420) = .01, *p* = .91). Furthermore, the brand x eco-label x additional information interaction was not significant (*F*(2, 1420) = 2.49, *p* = .08).

The final purchase intention was assumed to be influenced by product preference, attention to the eco-label and the understanding of the eco-label. The relationship between understanding of an eco-label, the attention paid to the eco-label, the product preference and the purchase intention was investigated using the Pearson correlation. There was a strong positive relationship between product preference and purchase intention, r = .65, p < .01 with high levels of purchase intention associated with high levels of product preference. The Pearson correlation also showed that there is a significant relationship between understanding of an eco-label and attention to an eco-label, r = .16, p < .01. Low levels of understanding were associated with both high and low levels of attention. High levels of understanding were also associated with both high and low

levels of attention. A small negative correlation was found between attention to an eco-label and the product preference, r = -.06, p < .01. The correlation indicates that low levels of attention were associated with both high and low levels of product preference. High levels of attention were also associated with both high and low levels product preference.

In Sum

The results of study 1 demonstrated that no relation was found between the understanding of an ecolabel and the attention a consumer pays to an eco-label. Furthermore, product preference was not influenced by the attention consumers have paid to an eco-label. However, a strong positive relationship was shown between the preference for eco-labelled personal care products and the final purchase intention of ecolabelled personal care products. The effect of additional information on product preference was demonstrated to be dependent of the brand and the eco-label. The preference for products containing an eco-label seemed to be significantly higher compared to the products without an eco-label, especially when they contained additional information. The purchase intention for green cosmetics was particularly high when the product contains the trusted label, regardless of the presence of additional information. No difference was found in the preference for products with or without an eco-label when the product package did not contained additional information. In sum, consumers did prefer products containing additional information most, but did not intend to purchase these products more.

In addition to product preference and purchase intention, health awareness and environmental awareness had also the focus in study 1. The relation between health awareness and environmental awareness was found to be positively related. Because of the great difference in mean scores, the two constructs could not be merged and were considered as two single variables in study 2.

Study 2

Method

A 2 (Brand: regular vs. natural) x 2 (Eco-label: trusted vs. not trusted) x 2 (Information: additional vs. no additional) x 2 (Product category: bronzing body lotion vs. regular body lotion) design was used. Study 2 focused on testing the preference and purchase intention of products when consumers are confronted with a choice task. Each participant completed a task consisting of 16 product combinations.

Participants. A total amount of 150 participants filled in the questionnaires of study 2. From these participants only 144 were considered to be in the target group, based on the level of education. The six participants who were not seen as target group were not included in the analysis. The final 144 female students had a mean age of 21.79 (SD = 2.62) years. The majority of the students in study 2 were studying behavioural sciences (51.8%), 22.3% studied in health, 7.2% studied economics and 7.2% did a technical study.

Materials. In both conditions participants were confronted with a total of 8 different products presented in 16 combinations (see Appendix 4). The products were manipulated in the presence of a trusted or not-trusted eco-label and the presence of additional information. In contrast to study 1, products without an eco-label were not used in study 2. The focus was on the difference between trusted eco-labels and not-trusted eco-labels on the purchase intention of consumers. To standardize the presentation of the products, in every combination Biotherm was presented on the left side and L'Oreal Paris was presented on the right side. Figure 6 shows two examples of the presented combinations.







Instruments. The questionnaire used in study 2 was based on the questions used in study 1. Nine constructs were used in the questionnaire; purchase intention, brand loyalty, eco-label knowledge, health awareness, environmental awareness, understanding, product preference, familiarity with the eco-label and

attention to the eco-label. All these constructs were applied in the same manner as in study 1, wherein eight constructs were measured using a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). Table 6 shows the Cronbach's alpha for five of these constructs. Another construct, attention to the eco-label, was measured by a recognition test. The only aspect on which the pre-test, study 1 and study 2 were different, was the measurement of product preference and purchase intention. The statements measuring both constructs were rescaled in study 2 in a way the participants could make a choice between product A (Biotherm) and product B (L'Oreal Paris) (see Appendix 8 and 9).

Table 6 Reliability of Constructs in Study 2

Construct	α
Health awareness (10 items)	.86 (N =144)*
Environmental awareness (9 items)	.73 (<i>N</i> = 142)*
Purchase intention (2 items)	.86 (<i>N</i> = 144)
Eco-label knowledge (11 items)	.86 (<i>N</i> = 142)
Brand loyalty (4 items)	.88 (<i>N</i> = 144)

* when deleting item 8

Procedure. Participants were recruited by sending email invitations, using online social networks, posting on Dutch online message boards or via advertisement at the university. Recruitment of participants in person was also very important for filling in the questionnaire.

Dependent on the way of recruiting, participants had to complete a web-based or paper-based questionnaire in which they had to respond to series of questions to test the hypotheses and the research question. Prior to the evaluations of the product combinations, each questionnaire opened with a short introduction. After the introduction, participants were confronted the 16 combinations of two manipulated products. The choice of the participants could be stated by indicating the preference for the product and the purchase intention on a 7-point Likert scale. When the participants made their choice within the product combinations, participants were asked to answer statements about *understanding the eco-labels, the attention paid to the eco-labels, environmental awareness, health awareness, brand loyalty, familiarity, the knowledge about eco-labels* and *trust in eco*-labels (see Appendixes 8 and 9).

Analysis. Data analysis in study 2 focused on evaluations of the manipulated products when presented in combinations. Prior to the analyses, participants were selected on the level of education. All participants with a lower education level than university were removed from the dataset. Thereafter, all product evaluations with a total of 4608 (32 x 144) measures were analysed by using ANOVAs to test the main and interaction effects of brand, eco-label and additional information for both product preference and purchase intention.

Results

Product preference. A factorial between groups analysis of variance (ANOVA) was used to investigate the effects of brand, additional information and trust in eco-labels on the product preference. In Table 7 the mean scores of product preference can be found as a function of eco-label, brand and additional information.

Table 7

Mean Scores and Standard Deviation for Product Preference in Study 2

	Additional information		No Additional Information	
	M (SD)	Ν	M (SD)	N
Natural Brand				
Eco-label A	3.90 (1.54)	721	3.78 (1.42)	720
Eco-label B	4.11 (1.51)	432	3.88 (1.51)	432
Regular Brand				
Eco-label A	3.36 (1.56)	575	2.90 (1.51)	432
Eco-label B	3.07 (1.46)	576	2.66 (1.44)	720

The ANOVA revealed no influence of brand on product preference, F(1, 4600) = 468, p = .09. Eco-label did influence the product preference (F(1, 4600) = 12.26, p < .001, $\eta_p^2 = .003$), with products containing the trusted eco-label A (M = 3.56, SD = .03) significantly more preferred compared to the not-trusted eco-label B (M = 3.41, SD = .03). Additional information was also influencing product preference (F(1, 4600) = 14.65, p < .001, $\eta_p^2 = .003$) with products with additional information were more preferred (M = 3.57, SD = .03) than products without additional information (M = 3.40, SD = .03).

Figure 7 demonstrates a statistically significant interaction of brand x eco-label which indicates that the effect of an eco-label on product preference depends on the brand of the product, F(1, 4600) = 5.06, p < .05, $\eta_p^2 = 001$. Products from the natural brand containing a trusted eco-label (M = 4.01, SD = 1.53) were not significantly more preferred in comparison to products with a not-trusted eco-label (M = 3.95, SD = 1.51), t(2303) = .87, p = .39. In contrast, the effect of the brand was influenced by the trust in an eco-label when the brand was seen as regular. Regular brands containing a trusted eco-label (M = 3.16, SD = 1.56) were significantly more preferred compared to products from the regular brand with a not-trusted eco-labels (M = 2.84, SD = 1.46), t(2094) = 4.97), p < .001.



Figure 7. Product preference as a function of brand and eco-label in study 2.

The additional information x brand interaction was also statistically significant, F(1, 4600) = 33.04, p < .0001, $\eta_p^2 = .007$ (see Figure 8). Follow-up tests revealed that the effect of adding information about the ecolabel to a product is dependent of the naturalness of the brand. When the brand is seen as natural, the preference for products containing additional information (M = 3.93, SD = 1.50) was not significantly different between compared to products without additional information (M = 4.05, SD = 1.54), t(2303) = -1.88, p = .06. In contrast, the preference for products from a regular brand containing additional information was higher (M = 3.21, SD = 1.52) compared to products without additional information (M = 2.75, SD = 1.47), t(2301) = .19, p < .001.



Figure 8. Product preference as a function of brand and additional information in study 2.

No statistically significant interaction was found for eco-labels and additional information, F(1, 4600) =1.18, p = .28. Furthermore, the eco-label x additional information x brand interaction was non-significant, F(1, 4600) =2.89, p = .09).

Purchase intention. A second factorial between groups analysis of variance (ANOVA) was used to investigate the effects of brand, additional information and trust in eco-labels on the purchase intention. Table 8 shows the mean scores for purchase intention as a function of eco-label, brand and additional information.

Table 8Mean Scores and Standard Deviation for Purchase Intention in Study 2

	Additional info	Additional information		nformation
	M (SD)	N	M (SD)	Ν
Natural Brand				
Eco-label A	3.57 (1.38)	720	3.59 (1.32)	717
Eco-label B	3.61 (1.33)	432	3.45 (1.35)	432
Regular Brand				
Eco-label A	3.52 (1.36)	574	3.37 (1.37)	431
Eco-label B	3.51 (1.32)	576	3.26 (1.31)	717

A statistically significant main effect of brand, F(1, 4591) = 11.86, p = .001, $\eta_p^2 = .003$, showed that products from a natural brand had a higher purchase intention (M = 3.56, SD = .03) compared to products from the regular brand (M = 3.42, SD = .03). A statistically significant main effect was also found for additional information, F(1, 4591) = 11.36, p = .001, $\eta_p^2 = .002$ with a higher purchase intention for products containing additional information (M = 3.55, SD = .03) in comparison to products without additional information (M = 3.42, SD = .03). The main effect for eco-label was not significant, F(1, 4591) = 2.08, p = .15.

An ANOVA revealed no significant interaction of additional information x eco-label x brand, which indicated that the effect of an eco-label on the purchase intention does not depend on the brand, F(1, 4591) =.003, p = .95. Furthermore, the interaction of additional information x eco-label was non-significant, F(1, 4591)= 3.28, p = .07. The effects of additional information on the purchase intention did not depend on the brand, F(1, 4591) = 2.80, p = .07. Finally, the brand x additional information x eco-label was non-significant, F(1, 4591)= .22, p = .64.

A multiple linear regression was conducted to determine the moderating influence of eco-label knowledge, brand loyalty and familiarity with the eco-label in predicting purchase intention. Table 9 shows the results of the multiple linear regression. The prediction model of eco-label knowledge was statistically significant, F(3,277) = 2.84, p < .05, and accounted for approximately 2% of the variance of purchase intention of eco-labelled cosmetics (R2 = .03, Adjusted R2 = .02). Furthermore, the prediction model of brand loyalty was also statistically significant, F(3,283) = 4.18, p < .01, and accounted for approximately 3% of the variance of purchase intention of eco-labelled cosmetics (R2 = .04, Adjusted R2 = .03). In contrast, the prediction model of familiarity was not statistically significant, F(3,284) = 1.73, p = .16, and accounted for a small percentage of approximately 1% of the variance of purchase intention of eco-labelled cosmetrated that a higher purchase intention was primarily predicted by a lower brand loyalty and by the presence of additional information.

	В	SE B	в
Eco-label	-0.04	0.07	03
Familiarity	0.05	0.04	.10
Eco-label x familiarity	0.03	0.06	.04
Brand	0.25	0 14	11
Brand loyalty	-0.17	0.07	20*
Brand x Brand loyalty	0.03	0.10	.02
Additional Information	0.09	0.04	.15*
Eco-label knowledge	0.04	0.02	.14
Additional information x Eco-label knowledge	-0.06	0.03	15

 Table 9

 Summary of Multiple Regression for Variables Predicting Purchase Intention in Study 2

Note. The dependent variable was Purchase Intention. *p < .05

Results of a linear regression suggest that purchase intention of the products with the different brands, eco-labels and additional information is not significantly predicted by health awareness or environmental awareness (see Table 10). Furthermore, health awareness and environmental awareness did not significantly explain a significant proportion of variance in the different scores on purchase intention. The moderating influence of both health awareness and environmental awareness can be excluded as a result of this regression analysis.

Table 10Linear Regression for Health Awareness and Environmental Awareness in Study 2

	Health awareness				Environmental awareness					
	В	SE B	в	t	F	В	SE B	в	t	F
PI Eco-label A	01	.03	03	30	.09	04	.03	11	-1.29	1.66
PI Eco-label B	.01	.03	.03	.36	.13	.04	.03	.13	1.45	2.25
PI Natural Brand	10	.11	08	94	.89	04	.11	03	36	.13
PI Regular Brand	.11	.11	.08	.94	.89	.04	.11	.03	40	.16
PI Additional Information	01	.03	03	38	.15	01	.03	05	57	.33
PI No Additional information	00	.03	01	13	.02	.01	.03	.03	35	.12

Note. PI represents Purchase Intention

In Sum

The results of study 2 demonstrate that the preference for green cosmetics was mainly determined by the brand of the product. The effect of the presence of additional information and trust in an eco-label were dependent of the naturalness of the brand. Products from the natural brand were highly preferred by consumers, regardless of the perceived trustworthiness of the present eco-label. The high preference of the consumers for natural brands was also translated into a high intention to purchase products from the natural brand. In contrast to the natural brand, the preference for a regular brand was influenced by the eco-label on the package. Adding a trusted eco-label to a product from a regular brand increased the preference compared to the not-trusted eco-label. Furthermore, additional information was also found to influence the preference of products from the regular brand, with products containing additional information most preferred.

Both studies 1 and 2 had the focus on the hypothesis formulated based on past studies. Multiple analyses have resulted in the (partially) acceptance or no acceptance of the hypothesis. In addition to the confirmation of the hypothesis, the main results from study 1 and 2 are shown in Table 11. Table 11.

Hypothesis	Factor	Study 1 (Statistics)	Study 2 (Statistics)					
Product prefer	Product preference							
H1	Brand	F = 2.84, <i>p</i> = .09	F = 468, <i>p</i> = .09					
H2**	Preference – Purchase Intention	-	-					
	Attention – Preference							
	Understanding - Attention							
H3*	Additional information	F = 11.28, <i>p</i> < .01	F = 14.65, <i>p</i> < .001					
H4***	Eco-label	F = 11.73, <i>p</i> < .01	F = 12.26, <i>p</i> < .001					
H5*	Eco-label knowledge	-	-					
H6***	Health awareness	-	-					
	Environmental awareness							
H7***	Health awareness	-	-					
	Environmental awareness							
H8***	Health awareness	-	-					
	Environmental awareness							
H9***	Brand loyalty	-	F = 4.18, <i>p</i> < .01					
H10***	Familiarity	-	F = 1.73, p = .16					
Purchase Intention								
H1	Brand	F = .01, <i>p</i> = .94	F = 11.86, <i>p</i> < .01					
H2**	Preference – Purchase Intention	-	r = .65, <i>p</i> < .01					
	Attention – Preference		r = .16, <i>p</i> < .01					
	Understanding - Attention		r =06, <i>p</i> < .01					
H3*	Additional information	F = 3.40, <i>p</i> = .07	F = 11.36, <i>p</i> < .01					
H4***	Eco-label	F = 4.97, p < .01	F = 2.08, p = .15					
H5*	Eco-label knowledge	-	F = 2.84, <i>p</i> < .05					
H6***	Health awareness	-	NB: F = .89, t =94, p = .35					
			RB: F = .89, t = .94, p = .35					
	Environmental awareness		NB: F = .13, t =36, p = .72					
			RB: F = .16, t =40, p = .69					
H7***	Health awareness	-	EA: F = .09, t =30, p = .77					
			EB: F = . 13, t = .36, p = .72					
	Environmental awareness		EA: F = 1.66, t = -1.29, p = .20					
			EB: $F = 2.25$, $t = 1.45 p = .14$					
H8***	Health awareness	-	AI: $F = .15$. $t =38$. $p = .70$					
			NA: F = .02, t =13, p = .89					
	Environmental awareness		AI: $F = .33$. $t =57$. $p = .57$					
			NA F = .12, $t =35$. $p = .72$					
H9***	Brand lovalty	-	F = 4.18, p < .01					
H10***	Familiarity	-	F = 1.73, $p = .16$					

Main Results for Product Preference And Purchase Intention in Study 1 and Study 2

Note. NB = Natural Brand, RB = Regular Brand, EA = Eco-label A, EB, Eco-label B, AI = Additional Information, NAI = No Additional Information. Results were not obtained for cells containing a dash. * Hypothesis accepted, ** Hypothesis partially accepted, *** Hypothesis not accepted.

General Discussion

This study has focused on the influence of additional information about eco-labels at the point-ofpurchase on the final purchase intention of the consumer. In the following chapter the research results will be discussed and conclusions will be drawn. In the first part, the different hypotheses will be discussed, after which the marketing implications will be discussed. Furthermore, the limitations of the present study and recommendations for future research will be identified. Finally a summary of the conclusions will be given.

Conclusion

Eco-labelling was initially created to encourage sustainable production and consumption on the cosmetic market. The symbols which represent eco-labels were intended to provide information about the environmental impacts of purchasing cosmetics. The effect of the information conveyed by eco-labels was not guided by the attention of consumers to eco-labels. Increased attention to eco-labels does not result in feelings of responsibility for the environment or health in a way consumers will prefer eco-labelled cosmetics (Lee, 2008). Besides motivation for protecting health and environment in choosing eco-labelled products, the ability of consumers to absorb and act on information given by eco-labels is also influencing the preference for eco-labelled cosmetics (Teisl et al., 2008). The present study assumed the influencing factor of eco-label does not directly result in attention for an eco-label. Thøgersen (2000) suggests that understanding an eco-label does not ensure that the information conveyed by an eco-label is perceived as useful. As a consequence, the attention paid to an eco-label is influenced by the perceived usefulness.

Regardless the absence of the predicting values of understanding of eco-labels and the attention to eco-labels for purchasing eco-labelled cosmetics, product preference was seen as an important predictor for the intention to purchase cosmetics containing eco-labels. Dependent on the image of a brand, adding an ecolabel to a product packaging can influence the preference and purchase intention of consumers. When consumers were confronted with products from different brands, a brand which is seen as natural (Biotherm) was preferred more by consumers. However, when eco-labels were added to a product package of a regular brand (L'Oreal Paris), a product which contains an eco-label perceived as trusted was preferred more by consumers compared to eco-labels that do not evoke trusted feelings. The effect of trust in eco-labels on the

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preference of consumers is not visible when a brand is perceived as natural. De Chernatony (2009) suggests that a contribution of an eco-label on a product with a natural brand image will be minimal as a consequence of the brand image which will influence the environmental perception of a brand.

As a consequence of the popularity of green cosmetics, an increased amount of cosmetics brands (both regular and natural) have added eco-labels to the product packaging. Consumers are not able to distinguish the different eco-labels and define the meaning of the eco-labels on the current cosmetic market. Additional information about eco-labels at the point-of-purchase has been demonstrated to influence the purchase behavior of the consumer. In particular, the purchase intention of eco-labelled products from a regular brand was influenced by the presence of additional eco-label information. However, despite the preference and purchase intention of consumers regarding cosmetic products containing additional information, the preference of consumers for cosmetics containing a highly trusted eco-label was not translated in the intention to purchase the product. The lack of translating the acceptance and preference of an eco-label on a cosmetic product into the purchase decision can be assigned to a higher amount of cons compared to pros for purchasing the product (Thøgersen, Haugaard & Olesen, 2010). On the one hand, consumers can perceive purchasing eco-labelled cosmetics as a way to act in accordance with environmental preservation (Akehurst, Afonso & Goncalves, 2012). On the other hand, being involved in pro-environmental behavior by purchasing eco-labelled cosmetics is seen by consumers, as a very small contribution to the environment, which is not a motivator to purchase the environmental-friendly product (Sinnappan & Rahman, 2011). Furthermore cosmetics containing eco-labels are often perceived as more expensive compared to regular products, which prevents purchasing the eco-labelled product (Rashid, 2009).

Despite the absence of translating the preference for an eco-labelled product in purchase intention in the present study, purchase intention was seen as an important predictor of final purchase behavior of consumers (Ramayah, Lee & Mohamed, 2010), which is influenced by multiple moderating variables. The knowledge about eco-labels was demonstrated to have a negative influence on the relation between the presence of additional eco-label information and the purchase intention of consumers. The negative moderating influence of eco-label knowledge on the relation between additional information and purchase intention can be assigned to a decrease of motivation (Thøgersen, Haugaard & Olesen, 2010). Motivation to pay attention to other brands seemed important in the influence of brand loyalty on the relation between brand and purchase intention. A potential explanation for the absence of the moderating influence of brand loyalty can be found in the loyalty to brands outside brands used in this study and for that reason consumers refuse to change the current purchase behavior (Bhate & Lawler, 1997). Due to brand loyalty, there is a possibility that consumers have developed a purchasing habit, which is very hard to break (Klöckner, 2012). A similar result was found for influence of familiarity with an eco-label on the relation between trust in an ecolabel and the purchase intention of an eco-labelled cosmetic product. Familiarity with an eco-label does not automatically result in adopting an eco-labelled product by purchasing the product (Thøgersen, Haugaard & Olesen, 2010). Furthermore, the present study has demonstrated that consumers' awareness regarding the environment and health also did not influence the purchase behavior of eco-labelled cosmetics. Health and environmental awareness were assumed to moderate the influence of brand, perceived trustworthiness in an eco-label and the presence of additional information on the purchase intention. A possible explanation for the absence of the influence of health and environmental awareness can be found in research by Mainieri, Barnett, Valdero, Unipan and Oskamp (1997), which indicates a related attitude as crucial for conducting the final action (purchase intention or purchase behavior). Furthermore, a lack of moral obligation can be an important reason for consumers to fail in translating their awareness into purchase intentions (Ramayah, Lee & Mohamed, 2010).

Marketing Implications

This study can serve several goals for marketing professionals. In the current cosmetic market a lot of different eco-labels exist and this amount is still growing. Some manufacturers are developing new eco-labels to distinguish themselves from other brands in the cosmetic market. Adding an eco-label to product packaging can be a good investment for manufacturers, because it will increase the product preference of the consumer. The demonstrated benefits of the addition of eco-labels on cosmetics packages results in an increased amount of confusion among consumers and they will not be able to distinguish the official and non-official eco-labels. The identification of the confusion on the eco-labelled cosmetic market, underlines the importance of informing the consumer about the meaning of symbols which represent the eco-labels. Additional information about eco-labelled cosmetics presented at the point-of-purchase increases the preference of consumers and will influence the intention to purchase the eco-labelled products. Before a cosmetic brand can benefit from

adding an eco-label and/or additional information to a product, brands need to be aware of the image that prevails among consumers. Brands perceived as natural do not need an eco-label or additional information to be preferred. In contrast, the preference of products from a regular brand increased tremendously as a consequence of adding the eco-label and additional information. Important to note is that not every eco-label will increase the preference of consumers. Consumers will only prefer eco-labels which they consider as trusted.

This practically implies that manufactures should be aware of the image of the brand they sell and the perceived trust of eco-labels on the product packaging. Subsequently, the effect of the addition of an eco-label to a product should be identified by measuring the level of trust in the eco-label. Thus, by being aware of the image and the trust in the eco-label, the success of an eco-labelled cosmetic product can be determined. This success will increase if the consumers also trust the given additional eco-label information. Trust can be accomplished by mentioning the source of the information, in which case an independent organisation will be trusted most. For marketing managers it is important to be aware of the limitations regarding the influence of eco-labels. Adding an eco-label to a product packaging will not automatically increase sales. By being aware of this, a marketing manager can decide whether it is worthwhile to invest in an eco-label.

Limitations

Although the conducted studies have achieved great results, some limitations need to be acknowledged. The target group of this research were young highly-educated woman, all studying at one university in The Netherlands. In comparison to other age groups, young women have a great interest in cosmetics, especially cosmetics containing natural ingredients and which are friendly for the environment, health and skin. The generalization of the results of this study for other age groups should be made with care. Furthermore the educational qualification may have influenced the product preference and final purchase intention of the consumers (Kolkailah, Aish & El-Bassioyuny, 2012). Besides the potential limitations in external validation concerning the target group of this study, the product category used in this study should be taken into account when generalising the results to other product categories.

The recruitment of the participants in this research and the way the questionnaires were filled out, could also be seen as a limitation in this research. The length of the questionnaire and the amount of time

participants needed to fill out the questionnaire may have influenced the answers. Participants who were not motivated or involved in this study may have become bored and tired and did not fill in the questionnaire in a proper way. Another limitation regarding the questionnaire appeared to be the question focusing on the attention to the eco-label, which is measured by a recognition task. Previous experiences with eco-labels before this study may play an important role in the recognition of eco-labels (Rodrigues, 2010). In addition to recognition task for measuring the attention to eco-labels, the attention to the shelf information was not measured in this study. Consequently, a lack of knowledge exists about the role of attention to shelf information in the recognition of eco-labels. Another issue which could have influenced the results, was the motivation of the participants to pay attention and use the eco-labels and the additional information when filling out the questionnaire (Verbeke, 2008). When participants were not motivated to use these information sources, the final purchase intention could have been influenced by the answers of these participants. Furthermore, purchase intention may also be influenced by the way of measuring in this study. Because the purchase intention seemed to be low correlated with the final behavior, the predictive validity of measuring self-reported purchase intention is questioned (Mittal & Kamakura 2001; Chandon, Morwitz & Reinartz, 2005). Besides the lack of predictive validity of purchase intention, the generalization of the answers can be questioned. In a real purchase environment, consumers do have limited time to make a purchase decision, in contrast to the absence of a time restriction in this questionnaire (Hicks, 2007).

Future Research

The main focus of the present research lied on the effect of additional shelf information about ecolabels on the purchase intention of eco-labelled cosmetics. The forced choice paradigm used to investigate participants' choices in the present study is not fully representative of the complexity of real consumer choice. To increase the external validity of the results, further study with more complex and realistic choice tasks in real purchase environments or online purchase environments is needed. In real environments, price information should is included. In future research this must be taken into account. Furthermore, attention to the eco-label and the additional information plays an important role in the final purchase decision of ecolabelled cosmetics. Therefore it would be interesting to further investigate the role of attention in purchasing eco-labelled cosmetics by using (mobile) eye-tracking methods. A final suggestion for further research focused on trust in eco-labels and the influence of additional information on the level of trust. Trust in eco-labels is an important factor for consumers in considering eco-labelled products. In this way, the final product choice for eco-labelled product can be influenced.

In Sum

The current research contributes to the understanding of ways to reduce the confusion which currently exists on the consumer market of eco-labelled cosmetics. Educating consumers about the meaning of symbols which represent eco-labels strengthened the preference for these products. It appeared that not every brand can add eco-label information at the point of purchase to increase the preference. Only if brands were seen as regular, additional eco-label information can add more value to a brand. Important for brands in adding information to an eco-labelled product is the knowledge of the potential purchaser about eco-labels. It has been demonstrated that the purchase intention of eco-labelled cosmetics with additional information can decrease for consumers with a high level of knowledge about eco-labels.

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