The effects of package materials in combination with food labels on consumers' product perception

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Abstract

Different studies have found that product packaging can influence the consumers' overall perception of the product. Therefore, the packaging of the product is an important communication tool for the manufacturers to communicate with the consumer. In this study, the influences of different package materials in combination with food labels on consumers' product expectations and product perception of coffee and coffee beans are investigated. While most of the researches are focused on the visual cues, in this research also the influence of tactile cues are measured. In a 2 (package material: a rough and matt surface versus a smooth and glossy surface) x 3 (food label: a eco-friendly label versus a quality label versus a basic label) design, 180 respondents evaluated a package of coffee beans and the coffee in a taste experiment. The respondents were afterwards split up in two groups: high involved consumers and low involved consumers. The attractiveness of the packaging, the perceived quality, the perceived eco-friendliness, the sensory attractiveness, taste intensity, taste liking, the product experience, the price expectation, and the purchase intension are in this research the dependent variables. It is found that consumers perceived the rough and matt packaging as more eco-friendly and are more positive about the taste when they saw and touched the rough and matt packaging. The food labels have a strong positive influence on the product expectations and product experience of the consumer as well. What is interesting, is that in many cases it was not important what kind of food label was presented on the packages, but that there was a food label presented. There is also an interaction effect found that show that congruence between the package material and the food label is important when it comes to the perceived quality. Finally, it was found in the rough and matt condition that the high involved consumers were considerably more positive about the product as compared to the low involved consumer.

Keywords: Package Material, Food Labels, Sensory Influences, Product Perception

Contents

1. Introduction

Going to the supermarket and buying the product you need is for the most people every day routine. Nevertheless, the consumer in the supermarket is facing thousands of different products from which a choice must be made. 73 percent of the purchasing decisions are taken at the point of sale itself (Rentie & Brewer, 2000). This means that consumers make the most of their purchasing decisions by comparing different products within a product category and making a choice in the store itself. Therefore, the packaging of the product is an important communication tool for the manufacturers to communicate with the consumer. Many consumers expect that they make a thoughtful and conscious decision in a supermarket, but this is often not the case. Consumers often make unconscious decisions when it comes to low involvement products, like the most products in a supermarket (Dijksterhuis et al., 2005). In this study, the influences of package material and design elements on the product perception of the consumer are investigated. The product that is tested is a package of coffee beans. For many consumers is this a low involvement product, but for some consumers it can become a more high involved product. Coffee beans come in many price ranges, quality difference, and have varied origin. People have different motives to buy a specific product. For example, people would like to have a product that is fair-trade, from high quality, or just buy the product with the lowest price.

In most cases, packaging plays a major role at the moment of purchase. The role of the visual aspects in packaging on product expectations and product experience has been extensively explored during the past decades. Visual elements such as colour, shape, and size were the most used elements in package design for a long time. For example, how a surface reflects light is important to a products' overall perceived qualities (Chen et al, 2009). How a product looks, has in almost all cases influence on the consumers' product perception. Therefore, visual elements are a part of this study. Even though the role of visual elements in packages has been extensively explored, it remains an important aspect of influencing the consumers' product perception.

But, consumers generally judge products through more than one sense. Therefore another sensory element is taken in this study, namely the role of tactile cues. In contrast to the many studies that explored the role of visual cues on product perception, there are only a few studies that explored the role of tactile cues - while tactile cues play an increasing role in package design. Touch is one of the senses through which consumers' judge different products (Chen et al, 2009). Increasingly, marketers, and designers are coming to realize the

importance of the sense of touch to attract the attention of consumers and create a rich product experience to the consumer (Jansson-Boyd, 2011; Spence & Gallace, 2011). An example of the influence of tactile cues is noted in a study by Piqueras-Fiszman and Spence (2012). They did research into the surface texture (rough/granular versus smooth) of packaging. In this research, participants tasted biscuits and yoghurt samples from pots with different surface textures. Piqueras-Fiszman and Spence found in their study that the texture of the package influenced peoples ratings of certain of the texture attributes being assessed, namely the most related ones. This research underlines the importance of tactile cues in the perception of food products.

In this study, the focus is on the combination between tactile and visual aspects. There is looked at the packaging material that draws expectations about the content of the package, but that is not directly related to the content. People obtain information from packaging features such as materials, shape or colours to create expectations toward a specific product. It is important to note that such usage of information should not be considered a conscious process, but should be seen as an implicit process in which the consumer used implicit schemata. With this schemata the consumer derived impressions from one or more sources and shape expectations for subsequent product expectations and experience (Pinson, 1986).

Beside the implicit factors that influence the consumers' product expectations and experience, there is another factor taken in this study - namely food labels on the packages. This elements affects the consumer in a more explicit way when it comes to creating product expectations. Food labels are increasingly used and have become an important factor in package design. Producers communicate through the use of package labels with de consumer at the point of sale. Producers of food and beverages should be responding to consumer behavioural trends and will have to distinguish themselves from competitors to be successful in de food business. For example, people are more consciously working on a responsible and healthy lifestyle. They want to consume qualitative, organic and also tasty food products. Many food producers respond to this move and seek the consumers' attention with different communication strategies, including the use of the product packaging. For instance, food labels communicate to consumers that a specific product is ethically responsible, high in quality or a healthy choice. This element in package design is often an explicit factor. The consumer links the information on the labels directly to the product. This in contrast to the tactile information obtained by package material. In this study, there is an eco-friendly food label, a quality label, and a basic label. The basic label served as a control group in this study.

There is looked at the influence of this information labels on the product expectations and experience of the consumer.

The last factor in this research is the level of involvement. The respondents are categorized in two groups, namely high involved consumers and low involved consumers. This is included in the research to discover the difference between this two groups when it comes to the effect of implicit and explicit influences. There are many studies that described how consumers make a purchase decision, but not how the level of involvement has influence on the perception of a product.

The combination of these three factors makes this research innovative. Firstly, because the influence of material surface patterns on food and beverage evaluation is limited. Tactile properties of the product and/or the packaging are important aspects in influencing the consumer, they are seen as highly important sensory input (Schifferstein & Cleiren, 2005). However, there are less studies about the influence of tactile aspects in packages and products on consumer responses. Also the combination with different food labels will give new insights in the consumers' reactions on food products. There is looked at the congruence between package materials and food labels and how this has an effect on product expectations and experience. There is looked at the interaction between these two factors and how they influence consumers with different levels of product involvement.

Finally, a short summery of how this concept is tested. The product that is used in this study are coffee beans. Two different package materials were used: a rough and matt material and a smooth and glossy material. The package materials are combined with three food labels: an eco-friendly label, a quality label, and a basic label. At last, the level of the product involvement of the consumer is taken in this research through divided the respondents in two groups: low and high involved consumers. With this information, the following research question is formulated:

"What are the effects of different package materials in combination with food labels on consumers' product expectations and product experience of coffee and coffee beans to low and high involved consumers?"

2. Theoretical framework

2.1 Package material surface

The way how a package feels, is an import element to create specific ideas and feelings about a product. Touch plays an important role in consumers' product evaluation and product appreciation (Gallace & Spence, 2009; Gallace & Spence, 2008). Consumers' tactile experience of a product can be manipulated by changing the way its surface feels. The texture of a package surface is a design element that consists of physical attributes created by a variety of materials and surface finishes. People perceive and predict characteristics of the surface corresponding to physical attributes through sensory information (Chen et al., 2009). These package properties are likely to be important in terms of their potential influence on a consumers' final multisensory product evaluation (Gallace & Spence, 2008; Spence & Gallace, 2009).

Different researchers have looked at how materials influence the consumers' evaluation of food and beverages. For example, an old study showed that the crisp sound of a wrapper increased the perceived freshness of bread (Brown, 1958). A more recent study showed that when people touch a flimsy cup, the perceived quality of the content that is served in the cup decreases (Krishna & Morrin, 2008). Biggs, Juravle and Spence (2016) showed in their study that biscuits taste sweeter when the participant takes a sample of a smooth plate, as opposed to a rough plate. Another study shows us that perceived bitterness and taste intensity increases when people drink from a cup with an angular surface pattern, whereas a rounded surface pattern induces a sweeter taste evaluation and a less intense taste experience (van Rompay, Finger, Saakes & Fenko, 2016). Also the study mentioned in the introduction of Piqueras-Fiszmana and Spence (2012) shows us that the texture of packaging influences people's ratings of certain texture attributes being assessed.

All these researches underline the importance of tactile cues in the perception of food products. With the information above and the findings that the usage of packages can enhance the perceived taste, the following hypotheses can be formulated:

Hypothesis 1: The perceived taste intensity of the product will be higher if the package has a rough/matt surface as compared to a smooth/glossy surface.

Beside the taste, also the perceived naturalness can be influenced by the package surface textures. Materials perceived as being rough when touched and have a matt look, generates the highest expected naturalness and eco-friendliness (Labbe, Pineau & Martin,

2013). Natural products are related to the absence of human intervention by opposition to non-natural entities which are widely transformed by human intervention (Rozin et al., 2004; Rozin, 2005). Rough materials might be related to imperfection and close to nature, this in contrast to smooth and rigid materials. Smooth materials are often more processed and consequently non-natural materials such as plastic based materials (Labbe, Pineau & Martin, 2013). Therefore, the following hypotheses is formulated:

Hypothesis 2: The perceived eco-friendliness of the product will be higher if the package has a rough/matt surface as compared to smooth/glossy surface.

The opposite of the rough and matt package surface, is the smooth and glossy package. Glossiness is seen as an important feature of attraction. It is a deep-rooted and very human preference (Meert, Pandelaere & Patrick, 2014). Cloonan and Briand Decré (2015) found strong support that individual preferences for glossiness affects product liking and therefore this can be a useful feature for package designs. A glossy packaging surface has also an affective and cognitive impact towards the perception on the attractiveness, level cost, and quality of product. Glossy packages are often perceived as higher quality and luxurious than packages with a matt surface (Chind & Sahachaisaeree, 2012). Based on this information, the following hypotheses are formulated:

Hypothesis 3 The attractiveness of the product will be higher if the package has a smooth/glossy surface as compared to a rough/matt surface.

Hypothesis 4: The perceived quality of the product will be higher if the package has a smooth/glossy surface as compared to a rough/matt surface

2.2 Food labels

The use of food labels has become increasingly important in the last decades. A reason for this is the increasing consumer demand for safer, healthier, and more environmentally friendly products (Loureiro, McCluskey & Mittelhammer, 2001). The use for food labels in general is to provide consumers with information, so they are able to choose products that match their individual preferences. For example, some consumers are looking specifically for ethical products, but ethical attributes are credence goods and cannot be checked by the consumer. In this case labelling is especially qualified to raise standards of ethical values and to allow consumers to match products to their individual preferences (Annunziata, Ianuario &

Pascale, 2011).

Different studies researched behavioural changes occurring in response to food labels. These studies show consistently that change in labelling or information can change consumers' product perceptions and behaviour (Wessells, Johnston & Donath, 1999; Kim, Nayga & Capps, 2000; Mathios, 2000; Loureiro, McCluskey & Mittelhammer, 2001). It is clear that labels change the consumers' expectations and experience of food products. For example, research shows that consumers prefer the taste of eco-friendly food over ordinary food products (Fillion & Arazi, 2002; Theuer, 2006), even when there is no different in the real taste. However, just calling a product eco-friendly is often enough to make consumers believe that the product tastes better than an identical alternative. This effect of labels arise even if there is no reasonable relation between the label and what is being evaluated about the product, thus a form of the halo effect. For example, people believe that fair trade chocolate is healthier and tastes better than non-labelled alternatives (Schuldt, Muller, & Schwartz, 2012; Lotz, Christandl, & Fetchenhauer, 2013).

Producers use food labels to communicate quality or the presence of specific desirable attributes, and create potential for premiums based on this signal. Thus, labelling can improve the functioning of markets for the perceived quality and/or product experience (Annunziata, Ianuario & Pascale, 2011). From the point of view of the offer, for companies the new ethical preferences of the consumer are translated into an opportunity to differentiate production and to improve competitiveness. As a result, from the marketing point of view, the levers on which companies have to act are not the classical ones anymore, but new tools are required such as the new marks of ethical certification (Annunziata, Ianuario & Pascale, 2011). This is particularly useful for credence and experience attributes, because labelling can transform these attributes into search attributes. In this sense, labelling is a tool of direct shopping aid to consumers, because the intention is to improve the quantity and often the nature of information available to consumers in their decision making and becomes an instrument of consumers sovereignty (Annunziata, Ianuario & Pascale, 2011).

With the information above and the findings that the usage of food labels can enhance the perceived product experience, the following hypotheses can be formulated:

Hypothesis 5: The taste liking of the product will be higher if the package has a eco-friendly food label on it, as compared to the package with the quality or the basic label.

Hypothesis 6: The perceived eco-friendliness of the product will be higher if the package has an eco-friendly food label on it, as compared to a package with the quality label or the basic label.

Hypothesis 7: The perceived quality of the product will be higher if the package has a quality food label on it, as compared to the package with the eco-friendly label or the basic label.

2.3 Congruence

The findings mentioned above show us that consumers rely on packing features to draw conclusions about the content of the package, even when the package is not directly related and has no direct influence on its content. An interesting phenomenon and in line with this notions, is the effect of congruence. This is an important effect when it comes to intrinsic and unconsciously influencing the consumers' expectations and especially product attractiveness. Different studies show that congruence may have a positive affect to consumer responses when it comes to the perceived product value, product impressions, and product experience (Bottomley & Doyle, 2006; Erdem & Swait, 2004). When consumers are confronted with a product and its packaging, they have to integrate all the meanings of the exposed elements and create an overall product impression. Mixed signals in a package design may create ambiguity with respect to the perceived product identity and also a negative influence affecting subsequent product evaluations (Reber, Schwarz & Winkielman, 2004).

When the design elements and information on packages are congruence, they may have a positive influence on the consumer (Reber, Schwarz & Winkielman, 2004). Congruence between stimuli leads to a fluent process of information. When people process stimuli fluently, they see this as an important aspect of attractiveness (Cho & Schwarz, 2010). Processing fluency is the subjective experience of how easy and how fast the incoming stimuli are processed (Reber, Winkielman & Schwarz, 1998). People use processing fluency as a cue to indicate how benign the stimuli are (Winkielman et al. 2006). A fluency signal is seen as hedonic, such that high fluency provokes a positive affective reaction. While people do not have a reasonable explanation for this positive reaction, they connect the fluency to the stimuli and associate this with greater attractiveness (Schwarz, 2004).

In this case, the package material should be congruence with the food label on the package. According to recent studies, the package with a rough and matt surface will congruence with the eco-friendly label. When people touch and see the rough martials, they generated the highest expected naturalness and eco-friendliness (Labbe, Pineau, Martin,

2013). On the other hand, the package with a smooth and glossy surface will be congruence with the quality label, because people associate glossiness with high quality (Chind & Sahachaisaeree, 2012). With this information about congruence and fluency, the next hypothesis can be formulated:

Hypothesis 8: The overall product liking will be higher with the packages where the material and the food label (rough/matt & eco-friendly and smooth/glossy & quality label) are congruence as opposed to the packages where the material and the food label are incongruence.

2.4 High and low involved consumers

To understand the choices of the consumer and apply this into a package design, it should be clear how consumers make choices and how they process information. There are a couple of theories about dual processing. A dual process theory provides a description of how a phenomenon can occur in two different ways, or as a result of two different processes. Often, the two processes consist of an implicit (automatic), unconscious process and an explicit (controlled), conscious process.

One of these theories is the Elaboration Likelihood Model of Petty and Cacioppo (1986). This theory provides a guideline describing how consumers process information at the point of purchase. According to their theory, there are two different routes to persuasion at the moment people make decisions. At first the central route, this takes place when the consumer is thinking carefully about the product, elaborating on the information they are given, and based on this information- creating an argument to buy a product or not. This route occurs when the motivation and the ability of the consumer is high. For example, people who are specifically looking for organic products or products without specific ingredients should use this central route more than people who do not look for specific product characteristics. The second route is the peripheral route and this takes place when the consumer is not thinking carefully about a product and uses shortcuts to make judgments and decisions. This route occurs when the motivation or ability of the consumer is low (Petty & Cacioppo, 1986).

Research shows that in everyday life consumer behaviour is often effortless and automatic and relies on the peripheral route (Chen & Bargh, 1997; Bargh &Chartrand, 1999; Kahneman, 2003). Especially when small choices must be made - as in the supermarket - the peripheral route will prevail (Bargh, 2002; Dijksterhuis et al., 2005). Food and beverage producers respond often to this phenomenon of decision making through the packaging of

their products. Different studies have found that product packaging can influence the consumers' overall perception of the product (Spence, Harrar & Piqueras-Fiszman, 2012) especially when it comes to low involved consumers. The packaging is often designed in a way that the consumer unconsciously creates some expectations of a product without actually having experience with this specific product. These unconscious expectations may be stimulated by various aspects of the package, such as colour, shape, design, and also - like in this study - the material of the packaging. But, a part of the consumers make a higher effort and have higher awareness when making a choice for a product. For example, when consumers look specifically for a high quality food product or a product that is ethically responsible. When this is the case, consumers should also use the central route.

For this research, there is looked if the respondents are relatively high or low involved when it comes to making decisions in the supermarket. Of course, when people buy things with bigger consequences, like a car, the involvement will be much higher than when people buy a package of coffee beans. But there will be differences between people in how they make decisions and therefore the terms high and low involved consumers are used in a relative manner. So, the respondents are categorized in the two groups of consumers mentioned in the introduction. The first group are low involved consumers, thus people who make fast and unconscious purchase decisions. The second groups are the high involved consumers who think carefully about the product, elaborating on the information they are given, and based on this - creating an argument to make a decision. Low involved consumers, according to studies, are more sensitive to design elements to which they are exposed (Dijksterhuis et al., 2005). On the other hand, the high involved consumers should be more influenced by information on the package. Therefore, the following hypotheses is formulated:

Hypothesis 9: The low involved consumers are more sensitive for intrinsic influences (the package material), as compared to high involved consumers.

Hypothesis 10: The high involved consumers are more sensitive for extrinsic influences (food labels), as compared to low involved consumers.

2.5 Research model

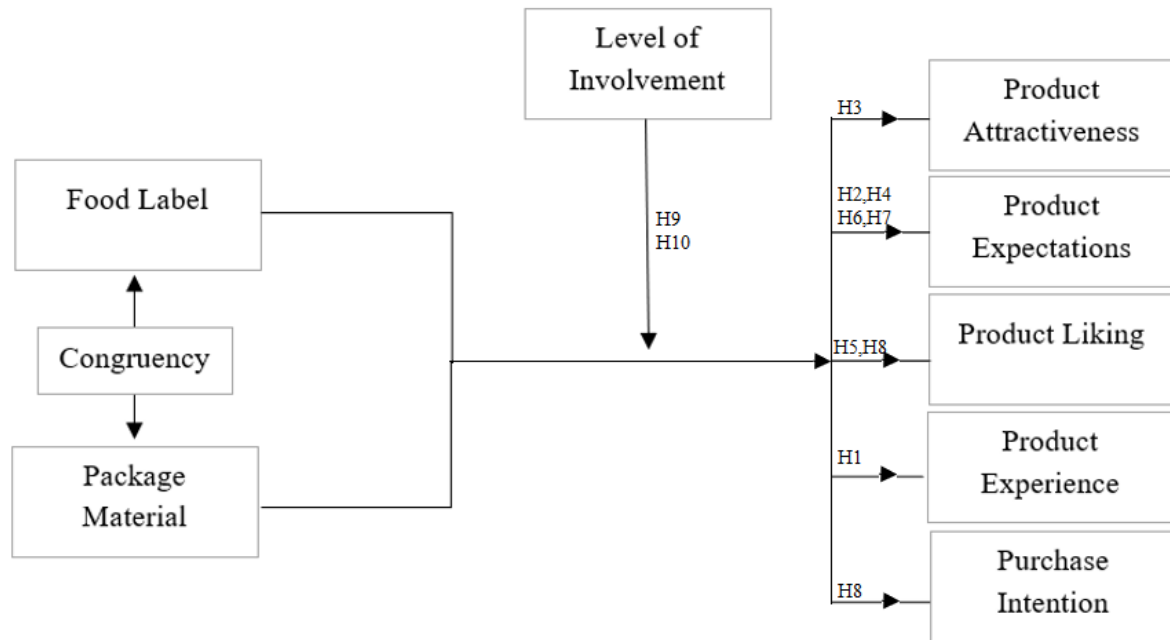To test the ten formulated hypotheses, the research model depicted in Figure 1 is used.

Figure 1*: Research model*

3. Method

3.1 Pre-test 1

The aim of the first pre-test was to select two food labels for the main study. This pre-test was conducted to find what associations people have when they see one of the two food labels. The first food label should radiate more eco-friendliness, while the second food label should radiate high quality. This are also two main constructs that are measured: quality and eco-friendliness.

3.1.1 Respondents

A sample of twenty participants were recruited via e-mail, social media, and face-to-face to participate the pre-test.

3.1.2 Stimuli

The food labels that were used are showed in figure 2 and figure 3. To make sure that respondents are not affected by colour or design, only the text in the two labels is different.

Figure 2*: Eco-friendly label*   ***Figure 3****: Quality label*

3.1.3 Procedure

In an online survey, the respondents were shown one of the labels first. While they are looking at the label, they get twelve statements to answer with a 5-point Likert scale from totally disagree to totally agree (Appendix A). The construct Quality consists of three items and the construct Eco-friendliness consists of four items. Beside this, the attractiveness and how realistic the two labels are, were also measured with one item for both.

Before analysing the results, the Cronbach's Alpha of the two main constructs were analysed to see if the internal consistency of the items was at least 0.7, which is seen as a satisfactory value. After deleting the item 'cheap' in the construct Quality, the Cronbach's Alpha of this construct had a value of 0.73. In the construct Eco-friendliness is also one item deleted to get a higher value, namely the item 'healthy'. Without this item, the Cronbach's Alpha had a value of 0.87. For the constructs Attractiveness and Realistic were just one item and so no Cronbach's Alpha.

3.1.4 Results pre-test 1

The collected data of the pre-test was analysed in SPSS. The means and the standard deviation for the different constructs were measured. The outcomes confirm that the quality label is perceived as higher quality in contrast with the eco-friendly label. The mean scores and standard deviation of the dependent variables are shown in table 1.

Table 1: *Quality*

Label	N	Mean	SD
Quality	10	3.76	0.69
Eco-friendly	10	2.93	0.58
Total	20	3.35	0.72

5-point Likert scale (1=disagree / 5=agree)

The second construct was the perceived eco-friendliness. In this construct, the outcomes confirm that the eco-friendly label is perceived as more eco-friendly in contrast with the quality label. An overview of this results is given in table 2.

Table 2: *Eco-friendliness*

Label	N	Mean	SD
Quality	10	2,78	0.54
Eco-friendly	10	3.76	0.74
Total	20	3.45	0.93

5-point Likert scale (1=disagree / 5=agree)

Beside the two mean constructs, also the attractiveness was measured. The results of the pre-test shows that the quality label is perceived as more attractive than the eco-friendly label. An overview of this results is given in table 3.

Table 3: *Attractive*

Label	N	Mean	SD
Quality	10	3.80	0.78
Eco-friendly	10	3.20	1.03
Total	20	3.50	0.94

5-point Likert scale (1=disagree / 5=agree)

The last construct that was measured, is how realistic the two labels are. The results show that the quality label is a bit more realistic than the eco-friendly label, but both are perceived as generally realistic. An overview of this results can be found in table 4.

Table 4: Realistic

Label	N	Mean	SD
Quality	10	3.90	0.87
Eco-friendly	10	3.60	0.96
Total	20	3.75	0.91

5-point Likert scale (1=disagree / 5=agree)

3.2 Pre-test 2

The aim of the second pre-test was to select two package materials for the main study. This pre-test was conducted to find associations that people had when they touched and saw the different package materials. When we looked at the findings in previous studies – the smooth and glossy package should radiate high quality, while the rough and matt package should radiate more naturalness and eco-friendliness. These are also the two main constructs: quality and eco-friendliness.

3.2.1 Respondents

A sample of twenty other participants than in pre-test 1 were recruited via face-to-face contact to participate the pre-test.

3.2.2 Stimuli

The packages that were used are shown in figure 4 and figure 5.

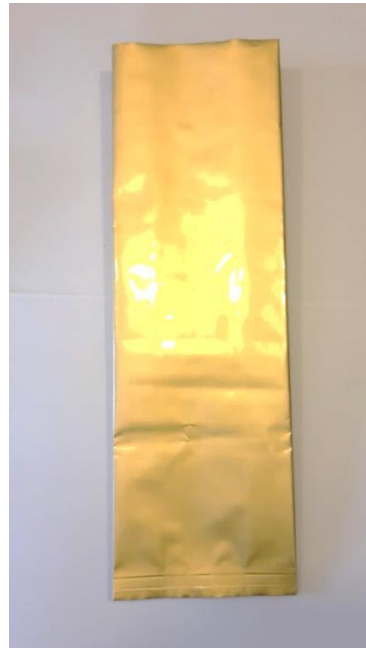***Figure 4****: Rough and matt package*   ***Figure 5:*** *Smooth and glossy package*

3.2.3 Procedure

The respondents were shown one of packages. While they looked at the package and touched the package, they got a questionnaire with twelve statements to answer with a 5-point Likert scale from totally disagree to totally agree (Appendix B). The construct quality consists of three items and the construct eco-friendliness consists of four items. In this pre-test the attractiveness and how realistic the two packages are were also measured with one item.

Before analysing the results, the Cronbach's Alpha of the two main constructs was analysed to find out the internal consistency of the items was at least 0.7. After deleting one item in the construct Quality, again the item 'cheap', the Cronbach's Alpha of this construct had a value of 0.81. In the construct Eco-friendliness is also one item deleted to get a higher value, namely the item 'healthy' and in this case the Cronbach's Alpha had a value of 0.90. For the constructs Attractiveness and Realistic was only one question and so no Cronbach's Alpha.

3.2.4 Results pre-test 2

The collected data of the pre-test was analysed in SPSS. The means for the different constructs were measured. The outcomes confirm that the smooth and glossy package is

perceived as higher quality in contrast with the rough and matt. The mean scores and standard deviation of the dependent variables can be found in table 5.

Table 5: Quality

Package	N	Mean	SD
Smooth and glossy	10	3.86	0.54
Rough and matt	10	2.76	0.60
Total	20	3.31	0.79

5-point Likert scale (1=disagree / 5=agree)

The second construct was the perceived eco-friendliness. In this construct, the outcomes confirm that the rough and matt package is perceived as more eco-friendly in contrast to the smooth and glossy package. An overview of this results is given in table 6.

Table 6: Eco-friendliness

Package	N	Mean	SD
Smooth and glossy	10	2.08	0.37
Rough and matt	10	3.98	0.54
Total	20	3.03	1.07

5-point Likert scale (1=disagree / 5=agree)

Also in pre-test 2, the attractiveness of the packages was measured. The results shows that the smooth and glossy is perceived as more attractive than the rough and matt package. An overview of this results are shown table 7.

Table 7: Attractive

Package	N	Mean	SD
Smooth and glossy	10	3.30	0.67
Rough and matt	10	2.90	0.73
Total	20	3.10	0.71

5-point Likert scale (1=disagree / 5=agree)

Finally the construct realistic was measured. The results show that both packages are seen as realistic. An overview of these results is given in table 8.

Table 8: Realistic

Package	N	Mean	SD
Smooth and glossy	10	4.10	0.73
Rough and matt	10	4.30	0.67
Total	20	4.20	0.69

5-point Likert scale (1=disagree / 5=agree)

3.3 Main study

The aim of the study was to investigate the effects of different package materials in combination with food labels on consumers' product expectations and product experience of coffee and coffee beans. This study utilizes a 2 (package material: rough and matt versus smooth and glossy) x 3 (food label: quality versus eco-friendly versus basic) between-subjects design, creating six conditions (table 9). The level of involvement is beside the package material and the food labels also an independent variable. The respondents are split up in two groups: high involved consumers and low involved consumers. The attractiveness of the packaging, the perceived quality, the perceived eco-friendliness, the sensory attractiveness, taste intensity, taste liking, the product experience, the price expectation, and the purchase intension are in this research the dependent variables.

Table 9: Conditions

Condition	Material	Food label
1	Rough and matt	Eco-friendly
2	Rough and matt	Quality
3	Rough and matt	Basic label
4	Smooth and glossy	Eco-friendly
5	Smooth and glossy	Quality
6	Smooth and glossy	Basic label

3.3.1 Respondents

For the main study, a sample of 180 Dutch respondents was recruited via face-to-face contact to participate in the research. All respondents participated completely voluntarily while they were asked to participate a taste test for a new coffee brand. The participants were between 18 and 84 years old (M = 33.40, SD = 19.46). From the 180 respondents there were 105 female, 61 male, and 14 respondents did not fill in the gender. The respondents participate randomly to one of the stimulus conditions.

3.3.2 Stimuli

The same package materials and food labels from the pre-tests were used to create for each condition a unique package (figure 6 till figure 11). However, a basic label was designed to make the packages more realistic. On this basic label, the food labels of the pre-test were integrated. In the control conditions, only the basic label was used.

Coffee beans and coffee were needed for looking, smelling, and tasting during the research. It was important that the coffee and the coffee beans were always the same. Therefore, one type of coffee beans is used – namely regular coffee beans from HEMA. Also the coffee that the respondents have tasted was always the same regular HEMA coffee mixed with the regular coffee from Douwe Egberts. By mixing the two coffees, the respondents will not recognize a specific taste of a coffee they may be familiar with. Also the strength of the coffee was always the same – namely 100 gram of coffee per 1.7 liter.

Figure 6:
Rough and matt +
Eco-friendly label

Figure 7:
Rough and matt +
Quality label

Figure 8:
Rough and matt +
Basic label

Figure 9:
Smooth and glossy +
Eco-friendly label

Figure 10:
Smooth and glossy +
Quality label

Figure 11:
Smooth and glossy +
Basic label

3.3.2 Instrument

For the main study a questionnaire (Appendix C) was made for measuring the effects of the different package materials in combination with food labels on the dependent variables. In the first part of the questionnaire the following nine dependent variables were measured: 1) the attractiveness of the packaging, 2) the perceived quality, 3) the perceived eco-friendliness, 4) the sensory attractiveness, 5) taste intensity, 6) taste liking, 7) the product experience, 8) the price expectation, and 9) the purchase intension. This part of the questionnaire consisted of 31 questions (see table 10) with a 5 point Likert scale leading from "disagree" to "agree". To check if the constructs were all reliable, the Cronbach's alpha was analysed for each of the variables. The Cronbach's alpha has to be at least 0.7, which is seen as a satisfactory value (Howitt & Cramer, 1997).

1. Attractiveness of the packaging

The first questions were about the attractiveness of the packaging. In this way the respondent had to look at the packaging and touch the packaging immediately, which is important to measure the effects of the different package materials and the food labels. A total of four questions regarding the attractiveness of the packaging were chosen. Within this construct items such as "The packaging is attractive" and "The coffee beans fit with the packaging" were used. The Cronbach's alpha of this construct is 0.84.

2. Perceived quality

For the construct perceived quality a total of three items were asked. Items such as "I expect the coffee beans to be of high quality " and "The product seems to me like a luxury product" were asked. The Cronbach's alpha of this construct was 0.59. This value showed us that the construct is not reliable, therefore one items is deleted what increased the Cronbach's alpha to 0.71 (table 10).

3. Perceived eco-friendliness

A total of three questions regarding the perceived eco-friendliness were chosen based on previous survey questions from the Food Choice Questionnaire (Steptoe, Pollard & Wardle, 1995). Examples of items in this construct are "I expect the product to be fair-trade" and "I expect the coffee beans to be organic". The Cronbach's alpha of this construct is 0.92.

4. Sensory attractiveness

The sensory attractiveness was measured with the help of a previous survey from the Food Choice Questionnaire as well (Steptoe, Pollard & Wardle, 1995). The questions were slightly changed to match the present research more. A total of four questions were asked to measure the sensory attractiveness. Items such as "The coffee beans have a nice smell" and "The coffee has a pleasant aroma" were asked. The Cronbach's alpha of this construct is 0.79.

5. Taste intensity

A total of four questions regarding the taste intensity of the coffee were asked. Examples of items in this construct are "The coffee has a powerful taste" and "The coffee has a mild taste". The Cronbach's alpha of this construct is 0.82.

6. Taste Liking

For the construct Taste Liking a total of four items were asked. Items such as "I like the taste of the coffee" and "The coffee has a nice aftertaste" were asked. The Cronbach's alpha of this construct was 0.65. This value shows us that the construct is not reliable, therefore one items is deleted what increased the Cronbach's alpha to 0.75.

7. Product experience

The product experience is measured based on a previous survey from Hirschman & Solomon (1984). The questions were slightly changed to make them fit in the present research. A total of four questions were asked for the product experience. Within this construct items such as

"The product is attractive" and "The product appeals to me" were used. The Cronbach's alpha of this construct was 0.84.

8 Price expectation

A total of three questions regarding the price expectation of the coffee beans were chosen based on a previous survey questions from the Food Choice Questionnaire (Steptoe, Pollard & Wardle, 1995). Examples of items in this construct are "I expect the product to be expensive" and "I expect the product to be cheaper than competitive brands". The Cronbach's alpha of this construct is 0.53. This value shows us that the construct is not reliable, therefore one items is deleted what increased the Cronbach's alpha to 0.62 – which is still too low to be reliable. Therefore the choice was made to do the analyses with only the item "I expect the product to be expensive".

9. Purchase intention

The last dependent variable is the purchase intention. Three items based on the scale from Dodds, Monroe & Grewal (1991) were used. Examples of questions in this construct are "I would like to try this product " and "I would consider buying this product". The Cronbach's alpha of purchase intention was 0.77.

Table 10: *Cronbach's Alpha per construct (1)*

Construct	Item	*α*	*α***
Attractiveness of the packaging	1) The coffee beans fits with the packaging 2) The packaging is attractive 3) The packaging appeals to me	.84	
Perceived quality	1) I expect the coffee beans to be of high quality 2) The product comes to me like a luxury product* 3) I expect competitive brands to be of better quality	.59	.71
Perceived eco-friendliness	1) I expect the coffee beans to be organic 2) I expect the coffee beans to be produced in an ecologically responsible way 3) I expect the product to be fair-trade	.92	

Sensory attractiveness	1) The coffee beans have a nice smell 2) The coffee has a nice mouthfeel 3) The coffee has a pleasant aroma 4) The coffee has a nice smell	.79	
Taste intensity	1) The coffee has a powerful taste 2) The coffee has a mild taste 3) The coffee has an intense taste 4) The coffee has a light taste	.82	
Taste Liking	1) The coffee has a pure taste 2) The coffee has a bitter taste* 3) The coffee has a nice taste 4) The coffee has a nice aftertaste	.65	.75
Product experience	1) The product appeals to me 2) The product is attractive 3) I experience the product as unpleasant 4) The product leaves a positive impression on me	.84	
Price expectation	1) I expect the product to be expensive 2) I expect the product to be cheaper than competitive brands* 3) I expect the product to have a good price/quality ratio*	.53	
Purchase intention	1) I would consider buying the product 2) I would like to try the product 3) I would rather buy coffee beans from another brand	.77	

* *Deleted items*
** *Cronbach's Alpha after deleted item*

The second part of the questionnaire was made for measuring the level of involvement of the consumer. This involvement level was divided into two constructs: eco-friendliness focused and the level of involvement during daily shopping. This part consist seven questions (table 11) with a 5 point Likert scale leading from "disagree" to "agree".

1. Eco-friendliness focused
For the construct eco-friendliness focused a total of four items were asked. Items such as "I buy as many products as possible in an ecologically responsible way" and " I am willing to pay more for a product that is ecologically responsible" were asked. The Cronbach's alpha of this construct was 0.88.

2. The level of involvement during daily shopping
A total of three questions regarding the consumers involvement in general to shopping behaviour in supermarkets. Items such as "I read and review the label of a product well before I will buy it" and "In the supermarket, I often compare products of the same category" were asked. The Cronbach's alpha of this construct was 0.79.

Only one construct is included in the results, namely the level of involvement during daily shopping. This because within this construct the most significant interaction effect is found and in the construct Eco-friendly focused are no significant results found. The respondents are divided into two groups (high- and low involved) by means of a median split in SPSS.

Table 11: Cronbach's Alpha per construct (2)

Construct	Item	α
Eco-friendliness focused	1) For me it is important that a product is organic* 2) For me it important that a product is fair-trade* 3) I buy as many products as possible on an ecologically responsible way are produced* 4) I am willing to pay more for a product that is eco-friendly*	.88
The level of involvement	1) I read and review the label of a product well before I buy it	.79

2) In the supermarket, I often compare products of the

    same category

3) I always make an well-considered decision when I buy

    a product

Deleted items

3.3.4 Procedure

Participants were approached individually at a local market or in a canteen and asked to participate a taste test for a new brand of coffee. At the moment they agreed to participate the research, the researcher gave a short explanation of what was expected of them. The researcher first handed the questionnaire and one of the packages, so the respondents could see and touch the packaging. Subsequently, they received a taste sample of the coffee. The taste samples were identical in all conditions. While the respondents completing the questionnaire, the researcher stayed around for questions or comments from the respondents. After completion the questionnaire, the participants were thanked for their cooperation.

4. Results

The results of the main study are described in this section. To investigate the effects of the independent variables, analyses of variance were conducted with package material (matt and rough or glossy and smooth) and food label type (eco-friendly, quality or a basic label) as independent variables, and the product expectations and product evaluation measured as dependent variables. A third independent variable is added, namely the level of involvement during daily shopping of the participants. This third variable is only described in the results when there are (marginal) significant interaction effects were found. Analyses of univariate analyse (ANOVA) with Bonferroni corrections were used to investigate if there were significant interaction effects. The significance level that is used is 0.05 or 0.10 for marginally significantly differences. In all constructs a 5-point Likert scale (1 = disagree / 5 = agree) is used.

4.1 Attractiveness of the packaging

To see whether the package material and the food label enhances the attractiveness of the package, an ANOVA was made. A main effect of the food label ($F(1,172) = 5,879$; $p = 0.003$) was found. Pairwise comparisons analysis with Bonferroni corrections showed that the packages with a food label are more attractive, both for the eco-friendly label (M = 3.77; SD = 0.97) and the quality label (M = 3.73; SD = 0.85), than the package with the basic label (M = 3.28; SD = 0.75). An overview of all the mean scores of the independent variables on the attractiveness of the packaging are shown in table 12.

Table 12: Attractiveness of the packaging

Condition	N	Mean	SD
Rough and matt & Eco-friendly label	30	3.90	1.03
Rough and matt & Quality label	30	3.72	0.90
Rough and matt & Basic label	30	3.28	0.66
Total	90	3.61	0.91
Smooth and glossy & Eco-friendly label	30	3.64	0.91
Smooth and glossy & Quality label	30	3.75	0.81
Smooth and glossy & Basic label	30	3.33	0.83
Total	90	3.57	0.86

There is also a significant interaction effect found between the level of involvement and the package material ($F(1,172) = 5,89$; $p = 0.016$). This interaction effect onto the attractiveness of the packaging show that the highest result for this construct can be found in the high involved group when the package is rough and matt (M = 3.84; SD = 0.85). As shown in figure 12, within the rough and matt package condition, the high involved group as opposed the low involved group ($p = 0.004$) sees the packaging as more attractive. Within the smooth and glossy condition, there are no significant ($p = 0.60$) differences.
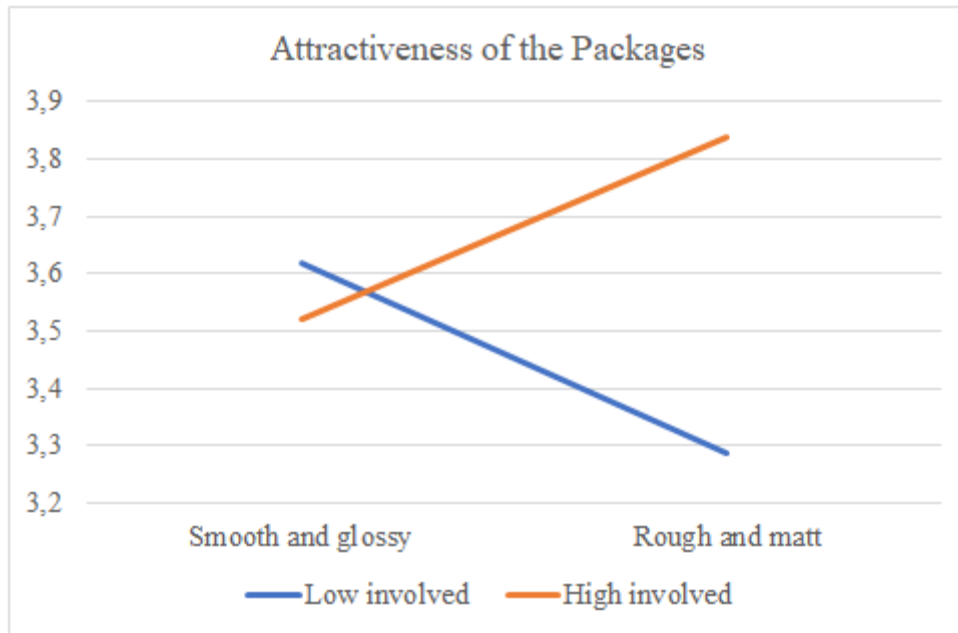
Figure 12: *Interaction effect of package material and the level of involvement into the attractiveness of the packages*

4.2 Perceived quality

While analysing the perceived quality, no significant main effect was found for the package material (p = 0.44). For the food label a marginal effect was found (F(1,172) = 2,75; p = 0.06). Pairwise comparisons analysis with Bonferroni corrections showed that the packages with a eco-friendly food label (M = 3.81; SD = 0.81) and the package with a quality label (M = 3.75; SD 0.95) are perceived as a higher quality product than the package with the basic label (M = 3.46; SD = 0.89). Furthermore, there was a significant interaction effect found between the food labels and the package material (F(1,172) = 5,276; p = 0.006). This interaction effect onto perceived quality shows that the highest result for this construct can be found when the rough and matt package is combined with a eco-friendly label (M = 4.05; SD = 0.86) or when the smooth and glossy package is combined with a quality label (M = 3.96; SD = 0.91). As shown in figure 13, within the rough and matt package condition, the eco-friendly label as opposed the basic label (p = 0.001) and the quality label (p = 0.027) increased the perceived quality. This in contrast to the smooth and glossy condition, where the eco-friendly label decreased the perceived quality opposed to the quality label (p = 0.06). Furthermore, within the smooth and glossy condition, the basic labels did not lead to

significant differences in the construct perceived quality (p = 0.66). An overview of the mean scores of the independent variables on the perceived quality are shown in table 13.
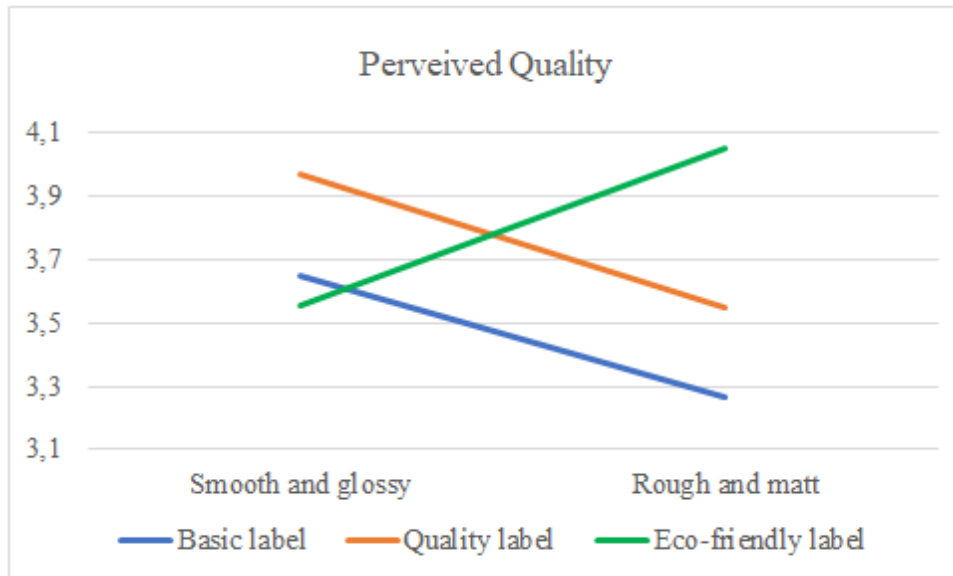
Figure 13: *Interaction effect of package material and food labels onto perceived quality*

Table 13 – Perceived quality

Condition	N	Mean	SD
Rough and matt & Eco-friendly label	30	4.05	0.87
Rough and matt & Quality label	30	3.55	0.95
Rough and matt & Basic label	30	3.46	0.89
Total	90	3.62	0.94
Smooth and glossy & Eco-friendly label	30	3.55	0.68
Smooth and glossy & Quality label	30	3.97	0.92
Smooth and glossy & Basic label	30	3.65	0.92
Total	90	3.72	0.86

There was also a significant interaction effect found between the level of involvement and the package material ($F_{(1,172)} = 4,927$; p = 0.028). This interaction effect shows that the highest result for this construct can be found in the high involved group when the package is rough and matt (M = 3.82; SD = 0.87). As shown in figure 14, within the rough and matt package condition, the high involved group as opposed to the low involved group (p = 0.015) estimate

the product as a higher quality product. Within the smooth and glossy condition, there are no significant (p = 0.50) differences.
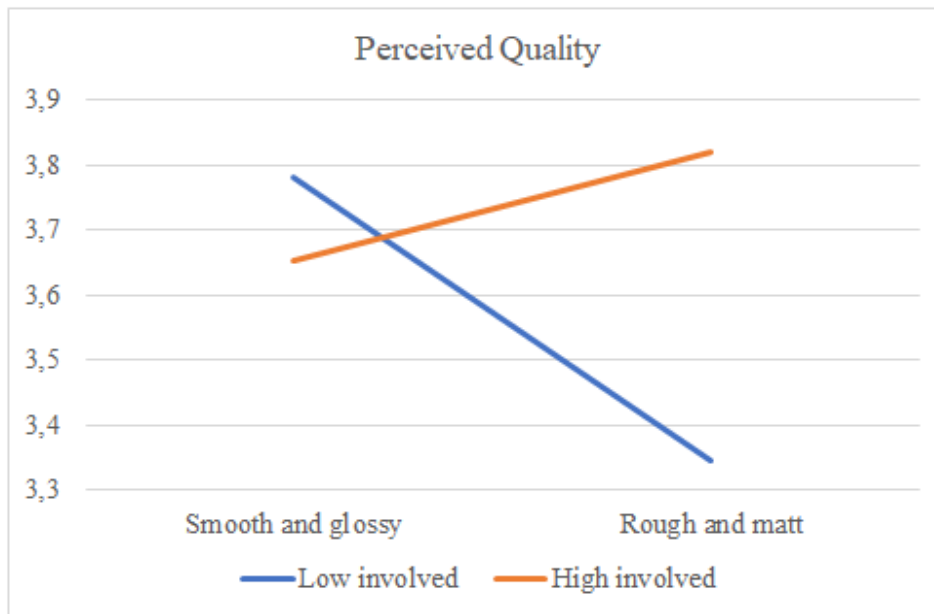
Figure 14: Interaction effect of package material and the level of involvement into the perceived quality

4.3 Perceived eco-friendliness

The ANAVO for perceived eco-friendliness show a main effect of package material $(F_{(1,172)} = 34,433; p < 0.005)$ and of the food label $(F_{(1,172)} = 15,752; p < 0.005)$. Pairwise comparisons analysis with Bonferroni corrections shows that the packages with a eco-friendly food label are perceived as a more eco-friendly product (M = 4.23; SD = 0.81) than the package with a quality label (M = 3.37; SD 1.31) or the basic label (M = 3.25; SD = 1.25). Also it was found within pairwise comparisons analysis that the rough and matt package is perceived as a more eco-friendly product (M = 4.07; SD = 1.02) than the product with a smooth and glossy package (M = 3.16; SD = 1.23). Furthermore, there was a significant interaction effect found between food label and package material $(F_{(1,172)} = 6,051; p = 0.003)$. This interaction effect onto perceived eco-friendliness shows that the highest result for this construct can be found when the rough and matt package is combined with a eco-friendly label (M = 4.31; SD = 0.94). As shown in figure 15, within the smooth and glossy package condition, the eco-friendly label as opposed to the basic label (p = 0.00) and the quality label (p = 0.00) increased the perceived eco-friendliness. In the rough and matt condition, the eco-friendly label shows only a marginally significant differences with the basic label (p = 0.067).

Furthermore, within the rough and matt condition, the labels did not lead to significantly differences in perceived eco-friendliness (p > 0.10). An overview of the mean scores of the independent variables on the perceived eco-friendliness are shown in table 14.
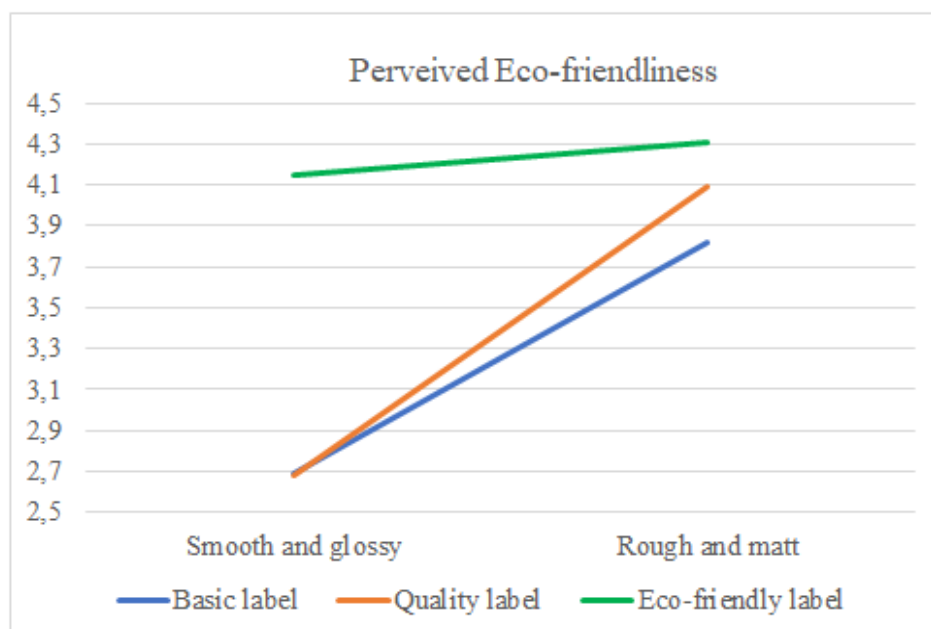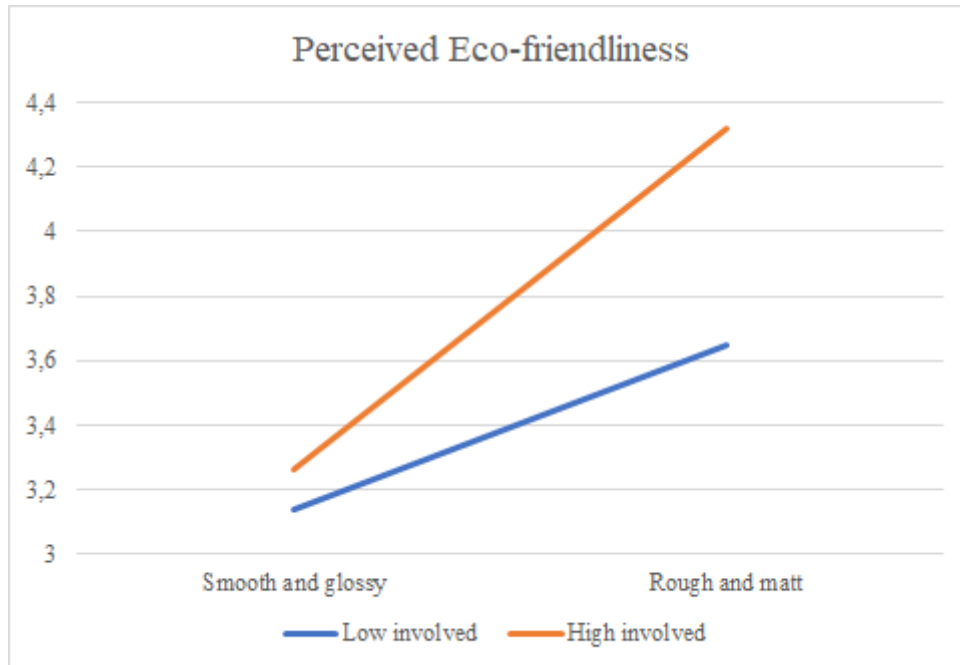

Figure 15: Interaction effect of package material and food labels onto perceived eco-friendliness

Table 14: Perceived eco-friendliness

Condition	N	Mean	SD
Rough and matt & Eco-friendly label	30	4.31	0.94
Rough and matt & Quality label	30	4.09	0.97
Rough and matt & Basic label	30	3.82	1.13
Total	90	4.07	1.02
Smooth and glossy & Eco-friendly label	30	4.14	0.66
Smooth and glossy & Quality label	30	2.67	1.27
Smooth and glossy & Basic label	30	2.68	1.10
Total	90	3.16	1.23

There was also a marginal significant interaction effect found between the level of involvement and the package material ($F_{(1,172)} = 3,358$; $p = 0.069$). This interaction effect shows that the highest result for this construct can be found in the high involved group when the package is rough and matt (M = 4.32; SD = 0.79). As shown in figure 16, within the rough

31

and matt package condition, the high involved group as opposed to the low involved group (p = 0.013) estimates the product as a more eco-friendly product. Within the smooth and glossy condition, there are no significant (p = 0.95) differences.

Figure 16: *Interaction effect of package material and the level of involvement into perceived eco-friendliness*

4.4 Sensory attractiveness

There were no significant main effects of the package material ($F(1,172) = 0,537$; $p = 0.46$) and the food labels ($F(1,172) = 1,558$; $p = 0.21$) on the sensory attractiveness. There was also no statistically significant interaction effect between this two depend variables ($F(1,172) = 1,772$; $p = 0.17$). Mean scores of the dependent variables on the sensory attractiveness are shown in table 15

Table 15: Sensory attractiveness

Condition	N	Mean	SD
Rough and matt & Eco-friendly label	30	3.98	0.94
Rough and matt & Quality label	30	3.81	0.67
Rough and matt & Basic label	30	3.50	0.85
Total	90	3.76	0.85
Smooth and glossy & Eco-friendly label	30	3.75	0.68
Smooth and glossy & Quality label	30	3.56	0.70
Smooth and glossy & Basic label	30	3.73	0.74
Total	90	3.68	0.71

4.5 Taste intensity

For the construct taste intensity were no significant main effects of the package material $(F(1,172) = 1,622; p = 0.205)$ and the food labels $(F(1,172) = 1,677; p = 0.190)$ found. There was also no statistically significant interaction effect between these two dependent variables $(F(1,172) = 1,326; p = 0.268)$. Mean scores of the dependent variables on taste intensity are shown in table 16.

Table 16: Taste intensity

Condition	N	Mean	SD
Rough and matt & Eco-friendly label	30	3.59	0.88
Rough and matt & Quality label	30	3.25	0.86
Rough and matt & Basic label	30	3.16	1.04
Total	90	3.33	0.94
Smooth and glossy & Eco-friendly label	30	3.22	0.92
Smooth and glossy & Quality label	30	2.90	1.06
Smooth and glossy & Basic label	30	3.31	1.06
Total	90	3.14	1.02

4.6 Taste liking

The ANAVO for taste liking shows a main effect of package material $(F(1,172) = 9,403$; $p = 0.003)$ and a marginal significant main effect of the food labels $(F(1,172) = 2,779$; $p = 0.06)$. Pairwise comparisons analysis with Bonferroni corrections shows that the coffee in combination with the rough and matt surface is rated higher $(M = 3.66$; $SD = 0.78)$ than in combination with the smooth and glossy surface $(M = 3.33$; $SD\ 0.69)$. The other main effect shows that the packages with a eco-friendly food label $(M = 3.57$; $SD = 0.79)$ and the package with a quality label $(M = 3.60$; $SD\ 0.76)$ are higher rated on taste liking than the packages with the basic label $(M = 3.32$; $SD = 0.68)$. There was no statistically significant interaction effect between this two depend variables $(F(1,172) = 2,227$; $p = 0.106)$. Mean scores of the dependent variables on the taste liking are shown in table 17.

Table 17: Taste liking

Condition	N	Mean	SD
Rough and matt & Eco-friendly label	30	3.78	0.85
Rough and matt & Quality label	30	3.82	0.71
Rough and matt & Basic label	30	3.31	0.53
Total	90	3.63	0.74
Smooth and glossy & Eco-friendly label	30	3.27	0.58
Smooth and glossy & Quality label	30	3.37	0.71
Smooth and glossy & Basic label	30	3.23	0.75
Total	90	3.29	0.68

4.7 Product experience

The ANOVA output of the independent variables for product experience shows a significant main effect of the food labels $(F(1,172) = 4,283$; $p = 0.015)$. Within the pairwise comparisons analysis with Bonferroni corrections it was found that the product experience were more positive to the packages with a eco-friendly food label $(M = 3.80$; $SD = 0.81)$ and with the quality label $(M = 3.75$; $SD = 0.79)$ than the package with basic label $(M = 3.40$; $SD = 0.86)$. Mean scores of the dependent variables on product experience are shown in table 18.

Table 18: Product experience

Condition	N	Mean	SD
Rough and matt & Eco-friendly label	30	4.04	0.89
Rough and matt & Quality label	30	3.87	0.71
Rough and matt & Basic label	30	3.39	0.93
Total	90	3.76	0.89
Smooth and glossy & Eco-friendly label	30	3.58	0.67
Smooth and glossy & Quality label	30	3.64	0.86
Smooth and glossy & Basic label	30	3.42	0.79
Total	90	3.55	0.77

There is also a significant interaction effect found between the level of involvement and the package material ($F_{(1,172)} = 5,21$; $p = 0.024$). This interaction effect onto the product experience shows that the highest result for this construct can be found in the high involved group when the package is rough and matt (M = 3.93; SD = 0.82). As shown in figure 17, within the rough and matt package condition, the high involved group as opposed to the low involved group ($p = 0.018$) experience the product as more positive. Within the smooth and glossy condition, there are no significant ($p = 0.41$) differences.

Figure 17: Interaction effect of package material and the product involvement onto product experience

4.8 Price expectation

There were no significant main effects of the package material ($F_{(1,172)} = 2,62$; $p = 0.11$) and the food labels ($F_{(1,172)} = 0,913$; $p = 0.40$) on the expected price. But, there is a marginal significant interaction effect found. This interaction effect onto price expectation shows that the highest result for this result for this construct can be found when the rough and matt package is combined with a eco-friendly label ($M = 3.87$; $SD = 0.94$). As shown in figure 18, within the rough and matt package condition, the eco-friendly label as opposed to the quality label ($p = 0.012$) increased the expected price. As opposed to the basic label, there is no significant difference ($p=0.12$). Within the smooth and glossy package condition, there are no significant differences ($p > 0.10$). Mean scores of the dependent variables on price expectation are shown in table 19.
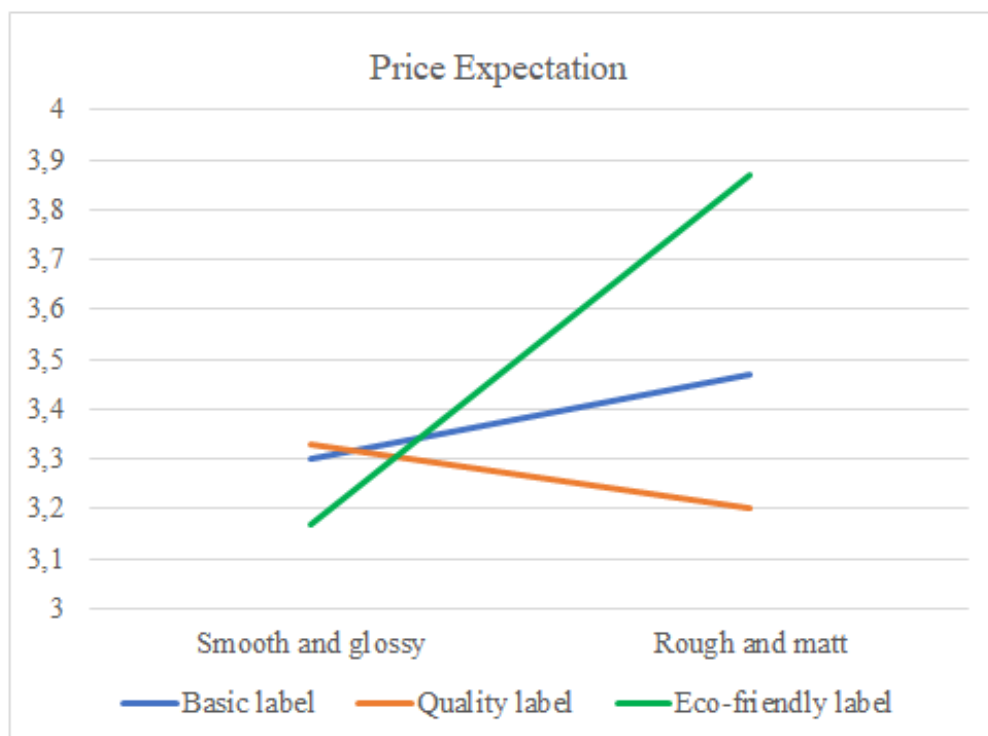
Figure 18: Interaction effect of package material and food labels onto price expectation

Table 19: Price expectation

Condition	N	Mean	SD
Rough and matt & Eco-friendly label	30	3.87	0.93
Rough and matt & Quality label	30	3.20	0.96
Rough and matt & Basic label	30	3.47	1.17
Total	90	3.51	1.05
Smooth and glossy & Eco-friendly label	30	3.17	0.79
Smooth and glossy & Quality label	30	3.33	1.15
Smooth and glossy & Basic label	30	3.30	1,02
Total	90	3.27	0.99

4.9 Purchase intention

To see whether the package material and the food label enhances the purchase intention, an ANOVA was made. A main effect of the package material ($F_{(1,172)} = 4,975$; $p = 0.027$) and on the food label ($F_{(1,172)} = 8,940$; $p < 0.001$) was found. Pairwise comparisons analysis with Bonferroni corrections shows that for rough and matt surfaced package the purchase intention was higher (M = 3.40; SD = 0.80) than for the smooth and glossy surfaced package (M = 3.10; SD = 1.01). Within pairwise comparisons analysis was found that the purchase intention was higher with the packages with a eco-friendly food label (M = 3.58; SD = 0.89) than with the quality label (M = 3.25; SD = 0.92) and the package with the basic label (M = 2.91; SD = 0.82). No significant interaction effects were found for this variable. Mean scores of the dependent variables on the purchase intention are shown in table 20.

Table 20: Purchase intention

Condition	N	Mean	SD
Rough and matt & Eco-friendly label	30	3.88	0.95
Rough and matt & Quality label	30	3.32	1.01
Rough and matt & Basic label	30	2.98	0.83
Total	90	3.40	1.01
Smooth and glossy & Eco-friendly label	30	3.28	0.67
Smooth and glossy & Quality label	30	3.18	0.85
Smooth and glossy & Basic label	30	2.84	0.82
Total	90	3.10	0.80

4.10 Overview Univariate Analyses

An overview of the results of the univariate analyses (ANOVA) with Bonferroni corrections are shown in table 21.

Table 21: Overview outcomes AVONA

Dependent variable	Independent variable	F-value	P
Attractiveness of the package	Package material	0.099	.753
	Food label	5.879	.003
	Package material * label	0.702	.497
	Package material * Level of involvement	5.894	.016
Perceived quality	Package material	0.598	.440
	Food label	2.752	.067
	Package material * Food label	5.276	.006
	Package material * Level of involvement	4.927	.028
Perceived Eco-friendliness	Package material	34.433	.000
	Food label	15.752	.000
	Package material * Food label	6.376	.003
	Package material * Level of involvement	3.358	.069

Sensory attractiveness	Package material	0.537	.465
	Food label	1.558	.214
	Package material * Food label	1.772	.173
	Package material * Level of involvement	1.018	.314
Taste intensity	Package material	1.622	.205
	Food label	1.677	.190
	Package material * Food label	1.326	.268
	Package material * Level of involvement	0.041	.840
Taste liking	Package material	9.403	.003
	Food label	2.779	.065
	Package material * Food label	2.277	.106
	Package material * Level of involvement	1.135	.288
Product experience	Package material	3.189	.076
	Food label	4.283	.015
	Package material * Food label	1.352	.262
	Package material * Level of involvement	5.209	.024
Price expectation	Package material	2.616	.108
	Food label	0.913	.403
	Package material * Food label	2.600	.077
	Package material * Level of involvement	0.007	.933
Purchase intention	Package material	4.975	.027
	Food label	8.940	.000
	Package material * Food label	1.393	.251
	Package material * Level of involvement	2.617	.108

4.11 Confirmation of the hypotheses

The aim of this study was to get insight into the effects of tactile/sight characteristics of the package and food labels on packages. By using different package materials in combination with food labels, the product expectations and product experience of coffee and coffee beans of the consumers with different levels of product involvement were measured. After analysing the data, the mentioned hypothesis can be confirmed or rejected by the results (table 22).

Table 22: Overview of the hypotheses

Hypothesis	Confirmed
H1: The perceived taste intensity of the product will be higher if the package has a rough/matt surface as compared to a smooth/glossy surface.	No
H2: The perceived eco-friendliness of the product will be higher if the package has a rough/matt surface as compared to smooth/glossy surface.	No
H3: The attractiveness of the product will be higher if the package has a smooth/glossy surface as compared to a rough/matt surface.	No
H4: The perceived quality of the product will be higher if the package has a smooth/glossy surface as compared to a rough/matt surface.	Yes
H5: The taste liking of the product will be higher if the package has a eco-friendly food label on it, as compared to the package with the quality or the basic label.	No/Yes
H6: The perceived eco-friendliness of the product will be higher if the package has an eco-friendly food label on it, as compared to a package with the quality label or the basic label.	Yes
H7: The perceived quality of the product will be higher if the package has a quality food label on it, as compared to the package with the eco-friendly label or the basic label.	No/Yes
H8: The overall product liking will be higher with the packages where the material and the food label (rough/matt & eco-friendly and smooth/glossy & quality label) are congruence as opposed to the packages where the material and the food label are incongruence.	No
H9: The low involved consumers are more sensitive for intrinsic influences (the package material), as compared to high involved consumers.	No
H10: The high involved consumers are more sensitive for extrinsic influences (food labels), as compared to low involved consumers.	No

5. Discussion

5.1 General discussion

A lot of the formulated hypotheses cannot be confirmed, but there are multiple significant results found - indicating unexpected results and new insights.

Effects of the package material

The findings show that the package material may have an influence when it comes to perceived eco-friendliness. As expected, the rough and matt package is perceived as a more eco-friendly product. This is in line with the study of Labbe, Pineau and Martin (2013). In their study was said that materials perceived as being rough when touched and have a matt look, generates the highest expected naturalness. Furthermore, the package material have influence on the product experience. Previous studies show that rough packages increase the taste intensity or bitterness of a product, but there is no significant evidence for this in this study. However, there is an significant effect found on taste liking. Within this construct people were more positive about the taste when the coffee beans were presented in the rough and matt package, while it was exactly the same product. Finally, there was found that the purchase intention is higher when the product has a rough and matt package. Looking at all the results, this is a logical outcome. In almost every construct, the results where more positive in the conditions with the rough and matt package. An possible explanation for this could be the behavioural change of the last years that people buy more organic and ethical responsible products. Such as the results shows us, people associate the rough and matt package more with eco-friendliness and in this way it will fit better in peoples preferences. However, this is just an assumption. To confirm this additional research is needed.

Effects of the food labels

The findings presented clearly show that food labels may have an influence on the product expectations and the product experience of the consumer. When looking at the construct attractiveness of the packaging, the results show that the packages with a food label are significant more attractive as compared to the packages with the basic label. These findings underline the previous study of Schuldt, Muller and Schwartz (2012) and the study of Lotz, Christandl, and Fetchenhauer (2013) where food labels are seen as a form of the halo effect. But not only the attractiveness of a product will be higher with a food label, also the perceived quality and eco-friendliness increases. While analysing the construct perceived quality, a

marginally significant effect was found on the variable food labels. These results show that the packages with a food label are perceived as a higher quality product as opposed to the packages with a basic label. That the perceived quality is higher in the condition with the quality label could be seen as obvious. But also the eco-friendly label is linked to high quality. Perhaps this is also partially due to the halo effect. However, this does not apply to the perceived eco-friendliness. Within this construct the quality label has no effect, but as expected - the eco-friendly label leads to a higher perceived eco-friendliness.

Not only the product expectations were influenced by the food labels, also the product experiences. The construct taste liking shows that the packages with a eco-friendly food label or the package with a quality label are higher rated on taste liking than the packages with the basic label. This is in line with the study that shows that consumers prefer the taste of eco-friendly food over ordinary food products (Fillion & Arazi, 2002; Theuer, 2006), even when there is no difference in the real taste. However, just calling a product eco-friendly or high quality is often enough to make consumers believe that the product tastes better than an identical alternative, like in this case the coffee with the basic label.

All these constructs together lead to a product experience in the same line. Within this construct it was found that the product experience was more positive with the packages with a eco-friendly food label or with a quality label than compared to the package with the basic label. In conclusion, the food labels certainly have an effect on the consumers' product expectations and product experiences. But the effects between the two food labels is minimal, more important is that there is a label presented on the packaging.

Interaction effects food label and package material
Furthermore, there are interesting significant interaction effects found between the food labels and the package material. Congruency of the package material and the food label turned out to be important when in becomes to the perceived quality. The perceived quality is rated higher when the package material and the food label are in congruence to each other. Not only the quality label in combination with the smooth and glossy package increased the perceived quality, also the combination with the eco-friendly label and the rough and matt package increased the perceived quality. This result is in line with studies about fluent information processing. These studies say that correspondence between stimuli leads to fluent information processing. A fluency signal is seen as hedonic, such that high fluency provokes a more positive reaction (Cho & Schwarz, 2010; Schwarz, 2004).

But when it comes to the perceived eco-friendliness, the congruency between the package material and the food label is less important. Within the smooth and glossy package condition, the eco-friendly label as opposed the basic label and the quality label increased the perceived eco-friendliness. So, in this case the food label is very important for the perceived eco-friendliness. In the rough and matt condition, the food labels are less important. The perceived eco-friendliness is already higher in the rough and matt condition.

The last interaction effect between the package material and the food labels is found in the construct price expectation. This interaction effect onto price expectation shows that the highest result for this construct can be found when the rough and matt package is combined with a eco-friendly label. Consumers probably think that eco-friendly products are more expensive comparing to general products. However, this is just an assumption. To confirm this additional research is needed.

Interaction effect package material and level of involvement
Besides the interaction effects that are found between the food labels and the package materials, there is another interesting interaction effect found between the package material and the level of involved during daily shopping. Resulting in the constructs attractiveness of the packaging, perceived quality, perceived eco-friendliness, and product experience is the interaction effect retrievable. What is interesting, is that there were only significant differences within the rough and matt package condition found, and not once in the smooth and glossy conditions. High involved consumers were in all constructs more positive about the product when it was presented in a rough and matt package as compared to the low involved consumers. Also the high involved consumers rated the product as more eco-friendly and as higher quality as compared to the low involved consumer.

Where these effects come from is not entirely clear, but this research confirms the previous study that says that the product packaging can influence the consumers' overall perception of the product and that there is a difference between a high and low involved consumers (Spence, Harrar & Piqueras-Fiszman, 2012). Probably, high involved consumers looked more carefully at the package and elaborated on the information they were given. Also, it is possible that high involved consumers in general buy more organic and ethical responsible products. What becomes clear in this research is that consumers associate the rough and matt package with eco-friendliness and in this way it fits better in possible

preferences of the high involved consumer. A future research could be focus on the specific differences between high and low involved consumers and test these assumptions.

5.2 Theoretical implications

The present research gave interesting results about the use of package materials and food labels and how they are influencing consumers' product expectations and experience. Previous research showed already that food labels can change consumers' perceptions of quality or eco-friendliness, but this research shows that the congruency with the rest of the package has an important influence on the perceived quality of a product. Another addition to the literature is the influence of the attractiveness of the package. Previous researches appoint the increasing taste liking and quality attributes to there being a food label present on the package. This study shows that the attractiveness of the packaging, so not immediately the content of the packaging, is higher when there is a food label present as well. When we looked at the product by means of the taste liking and a the product experience, this study underlines previous studies that states the positive impact of food labels on the consumer. Furthermore, the results show that the package with the rough and matt surface provokes a more positive reaction in general as compared to the package with the smooth and glossy surface. Finally, this study gave new insights into the differences between high and low involved consumers. High involved consumers are more positive about the product and have higher expectations about the quality and eco-friendliness, but this only within the condition with the rough and matt packaging.

5.3 Practical implications

The results of this research can be relevant for food producers. Because of the fact that consumers make the most of their purchasing decisions by comparing different products within a product category and making a choice in the store itself, it is important to know what appeals to the consumer and how to stand out on the shelf. For an overall higher positive product experience, it helps to add a food label on the package and so distinguish the product from competitors. When the aim is to want especially emit quality, it is important that there is congruency within the package when it becomes to verbal and non-verbal communication elements. In this case, the consumer sees the product as a higher quality product when the package material and the food label are congruence. Another result that is practically relevant, is that the packages that look eco-friendly are seen as more positive. It looks like consumers are more and more attracted to naturalness and eco-friendly products. Food producers can

response to this trend to offer more products within this category and especially ensure that the packaging fits with the product by means of package material and food labels.

5.4 Research limitations and future research

One of the goals of this research was to investigate the influence of tactile aspects in package designs. The role of this element is difficult to describe because we cannot exactly say that the results came from the tactile influence, the visual elements or a combination of this two elements. According to the theoretical framework, it should be a combination of the two elements that makes this results. But how big the influence of the visual elements are and how big the influence of the tactile element is, is not clear. Perhaps, this can be found out in future research. For example, if the respondents split up into two groups, one group only sees the package and the other group also feels the package.

Another future research proposal and at the same time a limitation from this research, is to make the setting more realistic. It has been tried to make the package as realistic and professional as possible within in the available time, skills, and budget. Still it looks quite different than packages in the supermarket. Also the research was taken at a local market and a canteen, this are normally not places were coffee beans are sold. For a more realistic setting, the research could be done in a supermarket.

In this research we looked mainly to eco-friendliness and quality. For future research it could be considered to do research for other types of products attributes, such as the perceived healthiness of a product. There might be a link between a natural looking package and the perceived healthiness of a product. It could also be interesting to test other products than coffee and coffee beans. For example tea or chocolate. This are also products that are available in many price ranges, quality differences, and have varied origin – such as organic or fair trade. But it is also interesting to investigate tactile elements in combination with visual elements in a total other category, like nutritional supplement or dairy products. Consumers should have total other expectations of this kind of product, which can create new insights in this field of research.

Another new insight within this study, but what needs to be researched more are the differences between high and low involved consumers when it comes to the influences of package attributes. The results show that the high involved consumers see the product as more positive compared to the low involved consumers. Possible explanations as to where these results come from are described in this discussion, but there is not a clear explanation. Future

research can focus on the differences between these two groups of consumers when it comes to the influence of sensory elements in packages.

5.5 Conclusion

With the findings it is possible to give an answer to the research question:

"What are the effects of different package materials in combination with food labels on consumers' product expectations and product experience of coffee and coffee beans to low and high involved consumers?"

The present study shows that the package materials have a strong influence on the product expectations and experience. Consumers perceived the rough and matt packaging clearly as more eco-friendly. More interesting is that people are more positive about the taste when they saw and touched the rough and matt packaging. Concluding, the consumers were overall more positive about the product when it was presented in the rough and matt packaging.

Beside the package material, the food labels have a strong influence on the product expectations and experience of the consumer as well. The food labels itself lead to a positive effect on attractiveness of the package, the perceived quality, the perceived eco-friendliness, the taste liking, and the product experience. What is interesting, is that in many cases it was not important what kind of food label was presented on the packages. What was important was that there was a food label presented on the package in the first place. Namely - the biggest differences within the constructs concerning the labels are found between the basic label and the other two labels and not between the quality label and the eco-friendly label. This does not apply for the perceived eco-friendliness, where the eco-friendly label leads to a higher perceived eco-friendliness.

Also, there were interaction effects found between this two independent variables. These interaction effects show that congruence between the package material and the food label is important when it comes to the perceived quality. This congruence resulted in a higher perceived quality. But when it comes to the perceived eco-friendliness, the congruency between the package material and the food label looks less important. For the expected price, was also an interaction effect found. People think that a product is more expensive when the variables are congruent to each other.

Finally the differences between the high and low involved consumers give surprising results. There is an interesting interaction effect between the package material and the level of

involvement in the rough and matt condition. The high involved consumers were in the constructs the attractiveness of packaging and the product experience considerably more positive about the product as compared to the low involved consumer. Also the high involved group sees the product as a higher quality product and as more eco-friendly.

6. References

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Appendix A: Questionnaire pre-test 1

Ik associeer de afbeelding met…

	Helemaal mee oneens	Mee oneens	Neutraal	Mee eens	Helemaal mee eens
Natuurlijk	O	O	O	O	O
Fairtrade	O	O	O	O	O
Hoge kwaliteit	O	O	O	O	O
Goedkoop	O	O	O	O	O
Gezond	O	O	O	O	O
Onnatuurlijk	O	O	O	O	O
Biologisch	O	O	O	O	O
Duur	O	O	O	O	O
Realistisch	O	O	O	O	O
Aantrekkelijk	O	O	O	O	O
Puur	O	O	O	O	O
Luxueus	O	O	O	O	O

Appendix B: Questionnaire pre-test 2

Ik associeer de verpakking met…

	Helemaal mee oneens	Mee oneens	Neutraal	Mee eens	Helemaal mee eens
Natuurlijk	O	O	O	O	O
Fairtrade	O	O	O	O	O
Hoge kwaliteit	O	O	O	O	O
Goedkoop	O	O	O	O	O
Gezond	O	O	O	O	O
Onnatuurlijk	O	O	O	O	O
Biologisch	O	O	O	O	O
Duur	O	O	O	O	O
Realistisch	O	O	O	O	O
Aantrekkelijk	O	O	O	O	O
Puur	O	O	O	O	O
Luxueus	O	O	O	O	O

Appendix C: Questionnaire main study

Geslacht: Man O   Vrouw O   Leeftijd: _____

1 = Mee oneens
2 = Een beetje mee oneens
3 = Neutraal
4 = Een beetje mee eens
5 = Mee eens

Stellingen over de koffie en koffiebonen	1	2	3	4	5
Ik vind de verpakking passen bij koffiebonen	O	O	O	O	O
Ik vind de verpakking aantrekkelijk	O	O	O	O	O
De verpakking spreekt mij aan	O	O	O	O	O
Ik verwacht dat de koffiebonen van hoge kwaliteit zijn	O	O	O	O	O
Het product komt op mij over als een luxueus product	O	O	O	O	O
Ik verwacht dat concurrerende merken van betere kwaliteit zijn	O	O	O	O	O
Ik verwacht dat de koffiebonen biologisch zijn	O	O	O	O	O
Ik verwacht dat de koffiebonen op een ecologisch verantwoorde manier zijn geproduceerd	O	O	O	O	O
Ik verwacht dat het product fair-trade is	O	O	O	O	O
Ik vind de koffiebonen een aangename geur hebben	O	O	O	O	O
Ik vind de koffie krachtig van smaak	O	O	O	O	O
Ik vind de koffie mild van smaak	O	O	O	O	O
Ik vind de koffie intens van smaak	O	O	O	O	O
Ik vind de koffie licht van smaak	O	O	O	O	O
Ik vind de koffie puur van smaak	O	O	O	O	O
De koffie heeft een bittere smaak	O	O	O	O	O
Ik vind de koffie lekker van smaak	O	O	O	O	O
De koffie heeft aan fijn mondgevoel	O	O	O	O	O
De koffie heeft een aangenaam aroma	O	O	O	O	O
De koffie heeft een lekkere geur	O	O	O	O	O
De koffie heeft een lekkere nasmaak	O	O	O	O	O
Het product spreekt mij aan	O	O	O	O	O
Ik vind het product aantrekkelijk	O	O	O	O	O
Ik ervaar het product als onaangenaam	O	O	O	O	O
Het product laat een positieve indruk op mij achter	O	O	O	O	O
Ik verwacht dat het product duur is	O	O	O	O	O
Ik verwacht dat het product goedkoper is dan concurrerende merken	O	O	O	O	O
Ik verwacht dat het product een goede prijs-kwaliteitsverhouding heeft	O	O	O	O	O
Ik zou het product overwegen te kopen	O	O	O	O	O
Ik zou het product een keer willen proberen	O	O	O	O	O
Ik zou eerder koffiebonen kopen van een ander merk	O	O	O	O	O

Z.O.Z.

1 = Mee oneens
2 = Een beetje mee oneens
3 = Neutraal
4 = Een beetje mee eens
5 = Mee eens

Stellingen over aankopen in het algemeen	1	2	3	4	5
Ik vind het belangrijk dat een product biologisch is	O	O	O	O	O
Ik vind het belangrijk dat een product fair-trade is	O	O	O	O	O
Ik koop zoveel mogelijk producten die op een ecologisch verantwoorde manier zijn geproduceerd	O	O	O	O	O
Ik ben bereid om meer te betalen voor een product dat ecologisch verantwoord is	O	O	O	O	O
Ik lees en bekijk het etiket van een product goed voordat ik het koop	O	O	O	O	O
In de supermarkt vergelijk ik producten van dezelfde categorie vaak met elkaar	O	O	O	O	O
Ik maak altijd een weloverwogen beslissing als ik een product koop	O	O	O	O	O