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The visual influence of transparent product packages

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Voorwoord

Finally, I made it! Na mijn studie Bachelor Small Business & Retail Management was ik op zoek naar meer verdieping in marketing en communicatie. Met een beetje onzekerheid begon ik aan deze nieuwe uitdaging, een Master Communication Studies. Een drukke en leerzame periode kwam me tegemoet, maar ondanks de vele uren studeren, leerzame en leuke momenten sloeg ik me er doorheen. Nu is het dan eindelijk zover, wie had dat gedacht. Joyce Keizer presenteert op 30 November 2016 haar Master Thesis. Het is me gelukt om de tegenslagen om te zetten in een vooruitstrevende blik en een mooie scriptie af te leveren. Ik ben trots op mezelf! Want zeg nou zelf; Hoeveel mensen kunnen zeggen dat ze een eigen product verpakking hebben ontworpen en geproduceerd, met hun eigen naam als merk. Yes, I DID!

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Joyce Keizer

ABSTRACT

Product appearance has been a commonly discussed topic in previous researches. Clement (2007) reported that the first contact with a product has changed over time to “what you see is what you choose”. The statement describes the importance of the visual sense. The visual sense creates several expectations about the product and the brand, based on what can be perceived from the package. The present study is conducted to indicate if and to what extent transparent packaging affects a consumer’s product evaluation, quality perception and purchase intention in the food environment, and if a product claim will amplify such an effect.

The study uses a 2 (hedonic vs. utilitarian) x 2 (transparent package vs. non-transparent package with on-pack food imagery) x 2 (product claim vs. no product claim) experimental design. Two product types, cookies (hedonic) and pasta (utilitarian), were determined by a pre-study. A total of eight stimulus materials are created, a transparent and non-transparent package provided with and without a product claim for each product. The dependent variables measured in this study are product evaluation, quality perception and purchase intention. The main study is executed in a medium sized Albert Heijn supermarket. A total of 102 respondents are randomly assigned to one of the experimental conditions.

The results of the study show significant evidence of transparency on all variables, except purchase intention. The non-transparent package is more preferred compared to transparent packages regarding product evaluation and quality perception. Furthermore, the transparent packages show a more positive effect towards the hedonic products compared to the utilitarian products. No significant evidence of any effect of transparency was found for purchase intention. No evidence was found for an amplifying effect of product claim with regard to transparent product packages.

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1. INTRODUCTION

The first contact between a consumer and a product package is through the eyes of the consumer. Product packages are powerful marketing tools, because the product decision is based on what can be perceived from a package (Clement, 2007). The biggest impact of product packages takes place in supermarkets, according to Rettie and Brewer (2000). 73% of the purchase decisions are made at the point of sale and 90% of these decisions are based on the visual appearance of a package. Consumers have to find, evaluate and compare products from a wide range of available products, before they make a decision. Therefore, the expectation of taste and flavor communicated by a package is important during the decision process (Glanz, Basil, Maibach, Goldberg & Snyder, 1998). When a product package catches the consumers' attention by its exterior design and communicates a great taste and flavor expectation, the choice for this product is more plausible.

The role of product appearance in visual marketing research is reported by several researchers (Bloch, 1995; Clement, 2007; Creusen, 1998; Rettie & Brewer, 2000). Product appearance influences consumers' evaluation, purchase intention and final decision at the point of sale. For example, Pinson (1986) concluded that product packages are more than just a container and he agrees to its visual impact. The shape, color, design, content, illustration and typography of a package communicate information (Pinson, 1986; Clement, 2007). The information ensures that consumers create an expectation about the product, such as expensive, luxury, new, tasty, qualitative and authentic. The product evaluation is influenced by these expectations and the consumer's personal value (Creusen & Schoormans, 2005).

The Dutch supermarkets offer a wider range of products compared to 40 years ago. Products vary into product type, size, taste, brand, package, nutrition and label. To innovate and differentiate, more attention is paid towards the design of product packages by food producers and marketers. The consumer needs to be convinced by product packages, such as packages with printed food imagery, remarkable colors, several shapes, sizes or weights which already made their entry (Underwood and Klein, 2002; Rettie & Brewer, 2000). Currently transparent product packages are increasingly growing in each product category. This study assumes that transparency is used as an innovation and differentiation of package design within the Dutch food industry.

It is seen in the supermarkets that products are presented in two ways; by food imagery printed on non-transparent packages and by transparent packages. Consumers prefer to see the product or an image before they make a decision (Clement, 2007). An image of the product, such as a picture can be perceived when packages are provided with a printed food image. The product itself, just as the real amount of food and its color can be perceived when packages are transparent. Expectations of taste and flavor might be better estimated by the real product than by food images. For example, when consumers prefer fresh, natural, new or authentic products, a transparent product package will contribute due to the fact that it presents the product in a clear way. The real freshness or natural appeal cannot be perceived from a product in a non-transparent package or food image. Transparent packages do not hide anything; all possible product characteristics can be perceived immediately. They can be perceived as positive (appealing, seductive) or negative (disgusting, unattractive), depending on product category, previous knowledge and product expectations. For instance, when the product inside the package is new or authentic, seeing the product can be an advantage to the expectation of the consumer.

Consumers perceive the real product through a transparent package. But to what extent do consumers react to transparent product packages in the food environment? Are these packages more preferred than packages presented with food imagery? Less research has been conducted to investigate the transparency of food packages. Therefore, this research will investigate if and to what extent transparency will effect consumers. The study also

explores if a product claim amplifies such an effect. Product claims are created by marketers to highlight a product's benefits. It is meant to be a still, expressive seller on the package.

2. THEORETICAL FRAMEWORK

2.1 Product appearance

Consumers notice and perceive a product's appearance by their senses. The senses have certain impact when consumers choose a product in store, open a package at home, prepare the food, use the product and re-purchase the product. Several researchers reported that vision is seen as an important sense during the decision process (Ampuero & Vila, 2006; Crilly, Moultrie & Clarkson, 2004). Vision creates an overall image of the product in the mind of the consumer and influences a consumer's product evaluation. This image is related to what can be perceived from the product package and to the consumer's personal value.

Product appearance is defined as the exterior and interior design of a product (Creusen & Schoormans, 2005). The exterior part can be observed by a consumer; the front of a product package. The interior part is not observable; it is related to the consumer's pre-knowledge and expectations of the product. Six different roles of product appearance were shown: attention drawing, categorization, communicate functional, ergonomic, aesthetic or hedonic and symbolic information (Creusen & Schoormans, 2005). The roles of product appearance are communicated by a product package and create several judgements towards the product. The judgements are perceived from the appearance and related to a consumer's cognitive, affective and behavioural responses (Crilly, et al., 2004).

Aesthetics and symbolic product value will be investigated in this study. These values or qualities of a product package steer consumers during their decision process (Creusen & Schoormans, 2005). For instance, when a consumer likes the appearance, it is suitable to the consumer (colorful appearance for a child) or to their needs (use for school or sports). Specific designed attributes of product packages, such as shape or color, will contribute to the needs of the consumer or the appropriateness of the product for the consumer. Becker, van Rompay, Schifferstein and Galetzka (2011) discovered that yoghurt packages with an angular shape are perceived as overall more positive, but also more expensive compared to yoghurt packages with a rounded shape.

Previous research indicated the effect of seeing food packages. Schifferstein, Fenko, Desmet, Labbe and Martin (2013) concluded that especially visual properties and other perceived attributes of a product package are the most important determinants during the decision process in a supermarket. The visual stimuli determines the perception, certain meanings and reinforce existing associations with the product, also seen as the value of aesthetic, symbolic and personal sense of a product for consumers (Hekkert, 2006). Vision indicates a consumer's expectation of the product, especially during the decision process in a supermarket. This expectation is perceived from a product package related to the contained ingredients of the product and a consumer's imagination of taste (Schifferstein, et al., 2013).

The effect of shape and color on product evaluation in the food industry is determined by several researchers. Package characteristics are able to create sensory expectations in the mind of a consumer. Ares and Deliza (2010) discovered that product color and shape have a significant effect on consumers' associations, expected liking and willingness to purchase. The package color of milk desserts is mainly related to flavor and the expected flavor, such as sweet and vanilla. While the package shape of milk desserts is mainly related to the sensory expectations, such as texture and types (Ares & Deliza, 2010). Piqueras-Fizman and Spence (2012) researched that the color of a plate affects a consumer's perception of flavor intensity, sweetness, and liking. Presenting a strawberry mouse on a white plate affects the final evaluation about the mouse more positively than presenting the mouse on a black plate.

Previous research explored the importance of product appearance and the package characteristics. Consumers are increasingly demanding with regard to the product package. Seeing the product on a package or through a package turns out to be more important in today's supermarket (Schürmann, 2008). These requirements show the fact that transparent

packaging presents the real product and that availability of these transparent packages are increasingly growing. Therefore, it might be interesting to address this subject, to find out if transparent product packages will be seen as an important package characteristic, such as color and shape.

2.2 Product material and package design

Product packages are designed by food producers. The packages are used to protect and contain the food, and to provide consumers with certain information (Coles, McDowell & Kirwan, 2003). The aim of these food packages is to contain the food in a cost-effective way, to satisfy industry requirements and consumer desires, maintain food safety and minimize environmental waste (Marsh & Bugusu, 2007). Various materials such as glass, paperboards, and plastics are used to produce product packages. These materials contribute to the safety, quality and freshness of food during distribution and in store. Material, structure and form are characteristics from the package, closely linked to the food inside the package. For instance, Lith (2015) discovered that chocolate packaged in healthy material (cardboard paper) is perceived as healthier than packaged in unhealthy material (plastic). When consumers are focussing on their health, they choose the cardboard packaged chocolate. Consumers purchase a product, if in their perception the package fits the product, therefore when successful packaged (Tu, Yand & Ma, 2015).

Besides the use of several materials, the visual appeal of package design is more important. Packages in the food industry are the most sophisticated and aesthetic pleasing packages (Schürmann, 2008). Especially in preparation for the holidays new package designs and products were produced. For instance, special food package designs are created in times of Christmas. Ice-creams, Santa's cookies, raisin bread, etc. are presented in a Christmas style. Consumers will treat themselves with special gifts and foods, in preparation for these holidays. It is common that plastics are used to package these food products. This material is flexible for design, inexpensive, lightweight, qualitative, protecting the odour, and has various physical and optical properties (Marsh & Bugusu, 2007; Peters-Teixeira & Badrie, 2005). Plastics are evaluated as the best choice of packaging, determined by previous research from Peters-Teixeira and Badrie (2005). Another advantage is its possibility of transparency, to show consumers the real product. The previous research examined a partially preference for transparency by grocery shoppers and consumers. 40% prefers transparent packages, another 40% prefers transparent packages depending on product category (Peters-Teixeira & Badrie, 2005). Each product differs in terms of package design, transparent or non-transparent (plain or with food imagery), packages could be preferred depending of its category.

2.3 Imagery and transparency

Product decisions are based on what can be perceived from the package. The availability of the product and the shelf-presentation are important. Products are often presented in two ways: non-transparent packages provided with printed food imagery and transparent packages. Product packages need to stand out, be attractive and persuasive. For that reason on-pack food imagery is created by marketers in the food industry. These packages could provide an effective meaning of communication with the consumer (Schifferstein, et al., 2013). The on-pack food imagery informs consumers of key product information in comparison with plain packages.

Underwood and Klein (2002) noted that extrinsic cues are used to infer intrinsic product attributes. The food imagery on packages gives consumers information about what can be expected from the product and how the product would taste at the point of sale. It contributes to an informal and clear way of communicating compared to plain packages. The on-pack food imagery creates an improved expectation of the product in the mind of the consumer. Appropriate on-pack food imagery can be an effective communicator or in contrary

it can be misleading (Underwood and Ozanne, 1998). Perceived expectations from the exterior design may be overestimated or do not match to the product inside the package. Underwood and Ozanne (1998) recommended four norms when marketers design new product packages; the norms of truthfulness, sincerity, comprehensibility and legitimacy. When one of these norms will be overrated by a consumer, the product is seen as less appropriate or perhaps even as unfair.

Transparent packages made their entry in the food environment. The transparent product packages are already used in some product categories. Showing a consumer what kind of product is inside the package is seen as an opportunity. According to Batra, Lawrence and Chandran (2010), transparent product packages are used for innovation and differentiation within the food industry. In terms of research, the influence of transparent packaging on consumers is still in its initial stage. It will be imperative for the food industry, to understand if transparent packaging is an effective or worthwhile package characteristic.

Transparent packages present a product in a clear way and avoid some product deceptions. The real amount of the product, the ingredients, the colors and size can be noticed through the package. Perceived product attributes have a certain impact on consumers, because the color of food influences a consumers' perceived liking, product preference, product attractiveness, product evaluation and perceived quality (Martin, Ji, Luo, Hutchings & Hederia, 2007; Spence, 2015). For transparent packages not the color of a plain package or the printed food imagery, but the color of the food is influencing a consumer. Therefore the product inside the package has to catch the attention of the consumer and suit to the consumer's expectations. The product inside is seen as a part of the exterior package design perceived by the consumers during their decision process. To present the product in a correctly and appropriate way, it positively contributes to the product expectations and the overall appearance (Troy & Kerry, 2010).

Consumers have their own preference for packaging depending on product category. This study assumes that transparent product packages are not preferred for each product category. Deng and Srinivasan (2013) found that food consumption is influenced by transparent food packages. Due to its visual appeal, transparent packaged food has a higher consumption rate (69%) than non-transparent plain packaged food. The consumption rate increases when products with a visual appeal are small (M&M's). For visually plain foods (Cheerio's), no effect is found between the two packages. Deng and Srinivasan (2013) concluded that transparent packages are not preferred for every product; it is depending on a product's category and food appearance.

This study will indicate the effect of transparent packages and non-transparent packages with food imagery, because previous research only examined plain packages (Deng & Srinivasan, 2013). A hedonic and utilitarian product are chosen to indicate the differences between product categories. The hedonic product is a final product and can be consumed directly, such as cookies. The utilitarian product is an ingredient, a part of the dinner and useful or practical, such as pasta. Both products will attract the attention of the consumer and create expectations about taste and flavor. This evaluation process is influenced by the visual appearance of the products. The visual appearance of the hedonic product will not change, the product can be consumed directly and seeing the product can be an advantage, more indicative. The visual appearance of the utilitarian product will change during the preparation process; other products or ingredients will be added before the product can be consumed, the real indication of the product can be made when the product is prepared. Therefore it will be expected that a transparent package will be more preferred for hedonic products compared to utilitarian products.

Validation of the findings should be investigated to understand the visual impact of transparent packages on consumers. Products are assessed by their appearance related to the first contact. The first judgements are made by a consumer's visual perception (Bloch 1995;

Clement, 2007). Certain meanings and reinforce existing associations are determined in the mind of the consumer (Hekkert, 2006). The perception, certain meanings and associations create an expectation of the product. In this research a consumer's expectation is measured by product evaluation, perceived quality and purchase intention.

The expectation of the product in general and the expectation of taste and flavor are seen as important influencers perceived from the exterior package design. As mentioned by Underwood and Klein (2002) packages give consumers information about how it would taste and provide more clarity about the product and the brand. These factors indicate if a product is suitable for the consumer and contributes to their needs. In the present study product evaluation is measured by the visual evaluation of a product in general, taste expectation and luxury perception. Consumers will better evaluate the visual appearance, taste expectation and luxury of the product from a transparent package, because the real product can be perceived.

Transparent packages could increase product choice for several product categories as shampoo and liquid laundry (Billeter, Zhu & Inman, 2012). The research showed that for these products transparent packages are preferred, are seen as trustworthy products and show more physical appeal. In this study perceived quality is measured by the quality of the product and the credibility of the brand. Quality perception will assess the honesty and credibility of packages and the brand, which are important during the decision process at the point of sales. It is assumed that consumers make a better indication of a product's quality and a product's brand quality from a transparent package, because there is nothing to hide.

Billeter, Zhu and Inman (2012) also found that transparent packages could increase purchase intention for shampoo and liquid laundry. Purchase intention is measured to indicate which products based on its evaluation and quality perception will be bought? Would consumers buy or try products only based on its visual appearance? It is suspected that the transparent packages increase the intention to purchase, because seeing the visual appeal of a product catches the attention and give certain expectations.

Summarized, this study assumes that transparent packages in general will be more preferred than non-transparent packages. Depending on product category, it will be expected that some differences will be found between the hedonic and utilitarian products. The following hypotheses are proposed:

H1. a – Transparent packages will have a positive influence on product evaluation

H1. b – Transparent packages will have a positive influence on perceived quality

H1. c – Transparent packages will have a positive influence on purchase intention

H2. – The effect of transparent packages will be more pronounced for hedonic products compared to utilitarian products

2.4 The influence of product claims

A package gives information about the product by written messages. Consumers would react on this information by ignoring it, arguing it or accepting it (Underwood & Ozanne, 1998). The information is controlled by the marketers and often accepted by the consumer. According to Chandon (2013) this information includes: "brand names (the corporate brand, umbrella brand and sub-brand), brand imagery (logo, symbols, slogans and design elements), benefit claims, seals and endorsements (heart healthy or smart choice), owned and third-party characters and nutrition information" (p.8). The visual sense ensures that this kind of aesthetic and content information can be perceived by the consumer. Based on this visual perception,

meanings and expectations will arise and consumers will judge the product. The brand, the product, the appearance, but also the claims or labels on a package have to be noticed in order to provide an overall judgement of the product in the mind of the consumer.

Packaging claims are seen as silent, expressive sellers and communicate the benefits of a certain product (Cousté, Martos-Partal, & Martínez-Rios 2012). These benefits are statements about a product's quality, hedonic attributes, nutrition value, healthiness or taste, to advertise the product (Cousté, et al., 2012; van Trijp & van der Lans, 2007). The presence of these claims causes certain effects, called halo-effect and overgeneralization. These effects occur from associations mentioned by the claim or devised by consumers themselves and can have a certain impact on consumers' product evaluation (Andrews, Burton & Netemeyer, 2000; Van Trijp & van der Lans, 2007; de Bruijn, 2009). For example, when a quality aspect is appointed by the claim (new, improved quality) all other product aspects are seen as qualitative, which ensures that the expectation of quality is high in the mind of consumers.

Nowadays presenting claims on packages are widely discussed. To cause a certain effect the product claim has to be generally acceptable, scientifically proven, understood by the average consumer and believable (de Bruijn, 2009). Marketers have to consider the degree of importance and persuasiveness of a product claim before presenting it on product packages. Fajardo and Townsend (2015) discovered that presenting a claim on the front of a package will increase believability, because of its proximity to the product. As stated by Van Ooijen, Fransen, Verlegh and Smit (2015) the value of a product claim influences the evaluation of the consumer. They explored that claims with a strong value (well sealable) contribute to the overall quality of a product compared to claims with a weak value (new formula).

The use of product claims in the food industry is increasingly growing, just as transparent packages. The product claim is used to claim a certain benefit of the product. As stated before, marketers can add product claims on packages but have to keep in mind that these claims communicate clear, understandable and trustworthy messages (de Bruijn, 2009; Rabobank, 2015). If marketers contribute to these aspects, a product claim causes a certain effect on a consumer's evaluation for non-transparent plain packages or non-transparent packages with on-pack food imagery. However, this study will explore whether a product claim can strengthen a transparent product packaging. An acceptable, clear, understandable and trustworthy claim related to a transparent packaging gives all aesthetic and content information to judge the product. The visual appearance of transparent packages is more indicative than non-transparent packages. Therefore it will be assumed that presenting a claim on the front side of a transparent package will contribute to the package. When the a product's benefit communicated by the product claim on a package fits to the real product, the product will be preferred by a consumer. The benefit claimed by the product claim is perceived by the visual appearance of the real product. The following hypotheses are proposed:

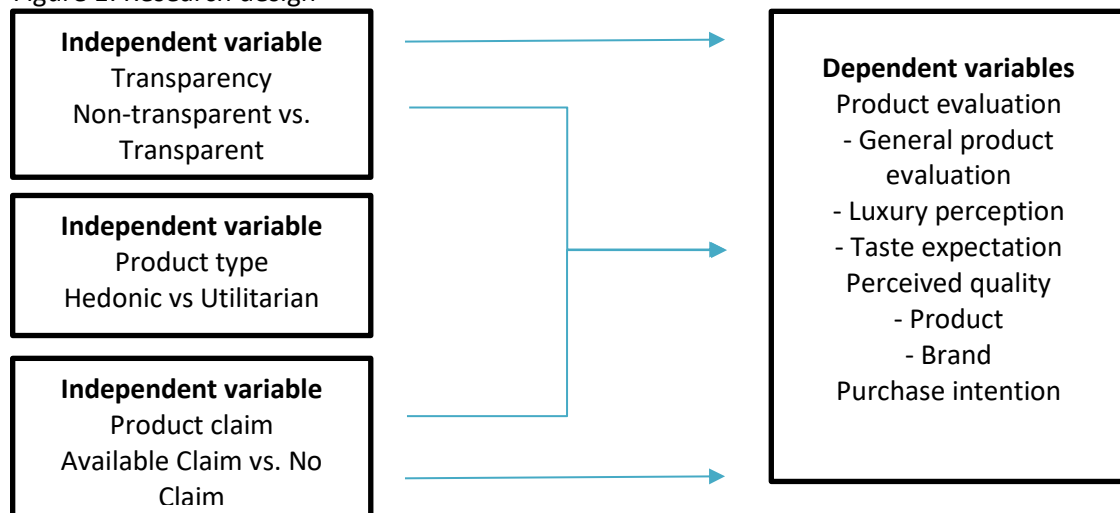
H3 – The effect of transparent packages will be more pronounced for packages provided with a claim compared to product packages without a claim

H4 – Transparent packages provided with a product claim will have a positive influence on product evaluation, quality perception and purchase intention

2.5 Research design

The research model gives an overview of all components of this study. The type of product, transparency and product claim are manipulated in order to find out whether they influence product evaluation, quality perception and purchase intention. As mentioned in the theoretical framework product evaluation and quality perception consist of more factors. Product evaluation will be measured by the general evaluation (attractiveness), taste expectation and luxury perception (price). Quality perception will be measured by the perceived quality of the product (trust and quality) and the perceived quality of the brand (credibility). Purchase intention will be measured to indicate if consumers are willing to buy or try the products based on their appearance.

Figure 1: Research design



3. METHOD

Before the main study started, a small pre-study was conducted to find out which products had to be used in the main study. Subsequently based on existing literature about color and images the stimulus material for the main study was designed. Product packages were created to mimic reality and to exclude certain biases.



Picture 1: Product Pre-study

3.1 Pre-study

An association was linked to an individual's range of attractiveness and the latitude of acceptance (Batra, Brunel & Chandran, 2009). In this study associations about transparent product packages will be determined to indicate the impact at the point of sale. Transparent packages did not present a plain package or an product image, but the real product. Consumers can perceive and judge the product, just as the amount, color and size. The packages presents a clear way of communication in comparison to non-transparent packages, because the product and the brand has nothing to hide.

Some previous researchers discovered the influence and preference of transparent product packages, depended on product category (Deng and Srinivasan, 2013). Therefore, several products were used to indicate the differences between non-transparent and transparent packages during the pre-study. The 11 products differ by product category and were presented in every supermarket and familiar by the general consumer. For every product two types of packages were taken into this pre-study; a transparent and a non-transparent packaging. Which makes a total number of 22 packages. The products were shown in 3-dimensional perspective, to ensure that color, authenticity and translucency were perceived well. All products were bought in the Dutch supermarket Albert Heijn and shown to the participants. A few participants were conducted in this research.

Before the pre-study started, the participants were given a short introduction about the moment of buying and some instructions. The instruction was essential to tell the participants they will not judge the brand, size and quantity of the products. Participants were instructed not to touch the products. These factors could influence a consumer's associations, expectations and evaluation. Each time, two packages (a transparent and a non-transparent) of the same product were shown on a table right in front of the participant. Participants were asked about their first impressions and associations, based on what can be perceived from the packages. Thereafter, two other products were shown, till the participants judged all 11 products.

Several associations from positive to negative were conducted from this pre-study, dependent of product category. During the pre-study it was seen that the participants evaluated the transparent packages quickly. Therefore, it was assumed that products with a transparent package could be visually better indicated than products with a non-transparent package. After merging all associations a hedonic product and a utilitarian product were chosen for the main study. Cookies are chosen as the hedonic product. The transparent packaged cookies is more preferred by the participants than the non-transparent packaged cookies, because of its indicative visual appearance. The transparent package is seen as visually attractive, luxury, salient and seeing the product is an advantage. Pasta is chosen as utilitarian product. The transparent packaged pasta show no preference compared to the non-transparent packaged pasta. The differences between the packages are less convincing, both packages are seen as suitable and practical.

3.2 Design and creation process of visual stimuli

The design and creation process of the visual stimuli is specially created for this study. Two different products were determined by a pre-study to indicate the difference between product categories, a hedonic and utilitarian product. Cookies, a hedonic product, a final product which can be consumed directly after opening a package. Pasta, an utilitarian product, an ingredient which cannot be consumed directly and changes during the preparing process. It is a part of a dinner, a useful or practical product. The general consumer is familiar with both products.

The designed packages only differ in package transparency and product claim and gives the impression of a possible real food product. The packages are exactly equal in terms of brand, nutrient information, nutrient labels, shape and size to exclude biases. To ensure existing brand information or images will not influence the perception of a consumer, a fictitious brand, on-pack food imagery and logo was devised. In addition, there are used neutral typefaces and colors for the logo, nutrient information and labelling. Two different kind of packages are used, a non-transparent on-pack food imagery package and a transparent package. Finally, the packages differ by claim availability. On the front of a package is provided a product claim or no product claim. This product claim is clearly visible on the front of the package and based on what a consumer would gain with purchasing the product.



Picture 2: Overview of the product packages

4. MAIN STUDY

The main study presented the experimental design. Thereafter the participants, the stimulus material, the research instruments and measures, the procedure and the data analysis which were used in this study will be explained.

4.1. Study design

The study applied a 2 x 2 x 2 experimental design. The design presents two types of food products (hedonic vs. utilitarian), two types of transparency (fully transparent vs. non-transparent with on-pack food imagery) and two types of product claims (claim vs. no claim). Each experimental condition from type of product is paired with an experimental condition type of transparency in combination with an experimental condition type of product claim. This causes for 8 different experimental situations, which are presented in the figure below.

Figure 2: Experimental design

Experimental conditions		Product claim	Type of food product	
		<i>Claim vs. No claim</i>	<i>Hedonic product</i>	<i>Utilitarian product</i>
Transparency	Fully transparent	Claim	Fully transparent x Available claim x hedonic product	Fully transparent x Available claim x utilitarian product
		No claim	Fully transparent x No claim x hedonic product	Fully transparent x No claim x utilitarian product
	Non-transparent	Claim	Non-transparent x Available claim x hedonic product	Non-transparent x Available claim x utilitarian product
		No claim	Non-transparent x No claim x hedonic product	Non-transparent x No claim x utilitarian product

4.2 Participants

The participants had to be consumers of a supermarket, with an age above 16 and living in the Netherlands. This in order to ensure that all participants will be familiar with the type of products and sometimes go to the grocery. Also a proper distribution in gender, age and education between the participants was favourable.

Table 1
Cookie Condition

Product	A	B	C	D
Transparency	Transparent	Transparent	Non-transparent	Non-transparent
Product claim	No claim	Claim	No claim	Claim

Table 2
Pasta Condition

Product claim	E	F	G	H
Transparency	Transparent	Transparent	Non-transparent	Non-transparent
Product claim	No claim	Claim	No claim	Claim

For the main study, 103 people were asked to participate. All of them observed two products with the same condition, to ensure that the participants not guesses the purpose of the research. For example, when the participant evaluated cookie condition A, he or she also evaluated pasta condition E (Table 1 and 2). All participants were instructed by the researcher to give their own opinion about the product packages. 103 questionnaires were administered, but one questionnaire was not completely filled out and removed from this study.

The participants were at the end of the questionnaire asked about their age, gender and highest completed education level. The participants in this study were between 17 and 86 years old ($M = 42,53$, $SD = 17,70$). They all agreed voluntarily to participate in the study. 102 people participated in this study, 28 of them were male and 74 of them were female. There was an equal distribution between the presented conditions; 25 participants evaluated the non-transparent condition, 25 participants evaluated the non-transparent provided with product claim, 26 evaluated the transparent condition and 26 participants evaluated the transparent provided with product claim. A total of 204 judgements were administrated in this study, 102 evaluations were measured for the pasta condition and also 102 evaluations were measured for the cookie condition.

Table 3

Participants' demographics per condition

		Condition				
		Non-transparent	Non-transparent with claim	Transparent	Transparent with claim	Total
Mean age (SD)		42,96 (14,21)	46,12 (21,95)	36,92 (15,46)	44,27 (17,93)	42,53 (17,70)
Gender	Male	6	5	9	8	28
	Female	19	20	17	18	74
Education	Primary school	0	0	0	1	1
	VMBO	7	5	2	3	17
	HAVO	0	3	2	2	7
	VWO/Gymnasium	0	1	0	0	1
	MBO	10	6	8	7	31
	HBO	8	9	11	9	37
	WO	0	1	3	4	8
Total		25	25	26	26	102

4.3 Stimulus material

In this section a description of all the materials used in the main study were conducted. This includes the manipulations of the independent variables which were performed during the main study. Furthermore, the instruments used in the main study will be presented.

Manipulation Materials

The manipulation in this study was determined with the use of visual stimuli. The designs of the visual stimuli were described in Paragraph 3.2. 8 different realistic product packages were created; four several product packages for the hedonic product and also four several product packages for the utilitarian product. For both products, the several packages were a

transparent package without claim, a transparent package with claim, a non-transparent package with on-pack food imagery without product claim and a non-transparent package with on-pack food imagery provided with product claim. Koninklijk genieten (royal enjoyment), was used as product claim on the packages. This claim was related to the taste expectation and quality perception of the products. Royal refers to the status of the product, a certain quality. Enjoyment refers to the expected taste of the product, nice or maybe delicious. This product claim was presented on the front of the product packages.



Picture 3: Cookie Condition - Product A



Picture 4: Cookie Condition - Product B



Picture 5: Cookie Condition - Product C



Picture 6: Cookie Condition - Product D



Picture 7: Pasta Condition - Product E



Picture 8: Pasta Condition - Product F



Picture 9: Pasta Condition - Product G



Picture 10: Pasta Condition - Product H

Instrument Materials

A questionnaire was used to manipulate the independent variables and measure the dependent variables. For every version of both products the dependent variables product evaluation, quality perception and purchase intention were measured. Product evaluation was divided in the specific variables general product evaluation, luxury perception and taste expectation. Quality perception was divided in the perception of product quality and brand quality. Beside these questions, there were some questions about the need for information, screening questions and demographic questions.

4.4 Research instrument and measurements

The questionnaire was composed by several constructs and the reliability of these constructs were measured by Cronbach's alpha. When the Cronbach's alpha was above 0.6, the internal consistency was appointed as acceptable. Table 4 presented an overview of the constructs. A total overview could be found at Appendix 2.

Product evaluation

The dependent variable product evaluation was divided into three parts; general product evaluation, luxury perception and taste expectation. All items were measured by a 7 point Likert scale. The scale for this dependent variable was constructed by previous research from Fenko, Otten and Schifferstein (2010), Fenko, Kersten and Bialkova (2016) and Machiels and Karnal (2016) and slightly altered to fit to the present study.

General product evaluation (GPE) was measured by six items ($\alpha = 0.960$). Questions started with 'the product seems, (beautiful/ugly, pleasant/unpleasant, ...)'. Luxury perception (LP) was measured by two items ($\alpha = 0.633$). 'This product seems luxury/standard' and 'I expect this product seems to be expensive/cheap'. Taste expectation (TE) was measured by six items ($\alpha = 0.921$). Questions started with 'I expect this product seems to be (traditional/not traditional, pure/not pure, ...)'.

Quality perception

The dependent variable product evaluation was divided into perceived product quality and perceived brand quality. All items were measured by a 7 point Likert scale. The scale for this dependent variable was constructed by previous research from Magnier, Schoormans and Mugge (2016), Sprott and Shimp (2004), Samant and Seo (2016) and altered to fit to the present study.

Perceived product quality (PPQ) was measured by six items ($\alpha = 0.899$). Questions started with 'The quality of this product seems to be (trustworthy/untrustworthy, convincing/unconvincing, ..)' and 'All things considered, I would say this product has poor overall quality/excellent overall quality'. Perceived brand quality (PBQ) was measured by three items ($\alpha = 0.940$). Questions started with 'I expect the brand seems to be (reliable/unreliable, ...)'.

Purchase intention

The dependent variable purchase intention was measured by 3 items ($\alpha = 0.912$). All items were measured by a 7 point Likert scale from totally agree till totally disagree. The scale for this dependent variable was constructed by previous research from Fenko, Kersten and Bialkova (2016) and Schoonbrood (2016).

Need for information

The covariant need for information was measured by 5 items. All 5 items were measured by a 7 point Likert scale from totally agree till totally disagree. The scale for this dependent variable was constructed by the researcher to indicate the manipulation check for the study. Did

consumers really perceive new packages? The 5 items proved a reliable scale to measure the construct need for information ($\alpha = 0,708$). The covariant 'Need for Information' showed no differences or influences for this study and would not be included to the other sections.

Screening questions

After the dependent variables the participants had to answer some screening questions. To indicate some specific background information. The screening questions were: 'Did you ever eat cookies/pasta', 'How often do you eat cookies/pasta' and 'Do you have any allergies/diseases that prevent you from eating cookies/pasta?'. These questions indicated the existing cognition of the participants about the kind of product category. No participants were excluded from the research. All participants had eaten pasta or cookies before, were familiar with the product or bought it regularly.

Table 4

Overview multiple item scale's

Measures	N	Items	Cronbach's alpha
Product evaluation	14	'This product seems: (1= beautiful, 7 = ugly)''	$\alpha = 0,954$
		'This product seems: (1 = pleasant, 7 = unpleasant)''	GPE: $\alpha = 0,960$
		'This product seems: (1 = enjoyable, 7 = not enjoyable)''	LP: $\alpha = 0,633$
		'This product seems: (1 = attractive, 7 = unattractive)''	TE: $\alpha = 0,921$
		'This product seems: (1 = seductive, 7 = repulsive)''	
		'This product seems: (1 = inviting, 7 = rejecting)''	
		'This product seems: (1 = luxury, 7 = standard)''	
		'I expect this product seems to be: (1 = expensive, 7 = cheap)''	
		'I expect this product seems to be: (1 = tasty, 7 = tasteless)''	
		'I expect this product seems to be: (1 = traditional, 7 = not traditional)''	
		'I expect this product seems to be: (1 = pure, 7 = not pure)''	
		'I expect this product seems to be: (1 = natural, 7 = not natural)''	
		'I expect this product seems to be: (1 = nice, 7 = not nice)''	
		'I expect this product seems to be: (1 = fresh, 7 = musty)''	
Perceived quality	9	'The quality of this product seems to be: (1 = trustworthy, 7 = untrustworthy)''	$\alpha = 0,824$
		'The quality of this product seems to be: (1 = convincing, 7 = unconvincing)''	PPQ: $\alpha = 0,899$
		'The quality of this product seems to be: (1 = honest, 7 = dishonest)''	PBQ: $\alpha = 0,940$
		'The quality of this product seems to be: (1 = acceptable, 7 = unacceptable)''	
		'The quality of this product seems to be: (1 = poor, 7 = excellent)''	
		'All things considered, I would say this product has: (1 = poor overall quality, 7 = excellent overall quality)''	
		'I expect the brand seems to be: (1 = reliable, 7 = unreliable)''	
		'I expect the brand seems to be: (1 = credible, 7 = incredible)''	
Purchase intention	3	'I would like to try this product''	$\alpha = 0,912$
		'I am seriously considering buying this product''	
		'I would recommend this product to others''	
Need for information	5	'When I do groceries I look carefully to the package of a product''	$\alpha = 0.708$
		'I appreciate it if I can see how the products looks like by a picture or transparency''	
		'I read the available information on the front of a package''	
		'I read what ingredients a product contains''	
		'I read what nutrition's a product contains''	

4.5 Procedure

The study was performed in a medium sized Albert Heijn supermarket in the Netherlands. The researcher was standing in the shopping area beside a table, contained with the set of product packages that has to be assessed by the participants. Consumers who passed by, were asked if they wanted to participate in a study for five minutes. They were not told about the exactly content of the study.

When the customers would participate to the study, the researcher gave them a short introduction. The participants were introduced about the study in general (gave your opinion about some new designed food packages) and were clearly instructed not to touch the product packages. Thereafter, the participants were given an iPad to fill out the questionnaire and gave their opinion. First the cookie package was presented on the table. Participants were asked to look carefully to the package and answer the questions about the cookie package on the iPad. Subsequently, the researcher presented the pasta package on the table. Again the participants were asked to look carefully to the pasta package and answer the questions on the iPad. At the end some general questions, screening questions, and demographic questions has to be completed. When participants finished the questionnaire, they were thanked for participating.

4.6 Data analysis

To examine the relationships between the variables of the research model an analysis of variance (ANOVA) was performed. The independent variables were type of product, transparency and product claim. The dependent variables were product evaluation (general product evaluation, luxury perception, taste expectation), perceived quality (perceived product quality, perceived brand quality) and purchase intention. During the study, type of product (cookies/pasta) was used as within-subject factor. Therefore, there was created a separate dataset for product type (cookie and pasta). ANOVA was used to see the difference in transparency and claim for each product type. An alpha level of 0.05 was mentioned for all significant calculations.

5 RESULTS

The result section showed which main effects and interaction effects were found between the dependent and independent variables in this study. First the significant effects of pasta and then the significant effects of cookies were presented. Table 5 showed an overview of all the outcomes.

Table 5

P-values of the product types, for transparency and product claim

Dependent variables	Pasta		Cookie	
	Transparency	Claim	Transparency	Claim
Product evaluation				
General product evaluation	0.009*	0.118	0.070**	0.193
Luxury perception	0.001*	0.708	0.006*	0.295
Taste expectation	0.001*	0.076	0.071**	0.014*
Overall condition of PE	0.001*	0.105	0.025*	0.043*
Perceived quality				
Perceived product quality	0.050*	0.104	0.318	0.355
Perceived brand quality	0.039*	0.199	0.137	0.006*
Overall condition of PQ	0.037*	0.115	0.218	0.097**
Purchase intention				
Purchase intention	0.195	0.026*	0.696	0.002*

* $p < 0.05$

** $p < 0.10$

5.1 Pasta

5.1.1 Product evaluation

Product evaluation was measured by the dependent variables general product evaluation, luxury perception and taste expectation. These three dependent variables explored the overall product evaluation of the participants.

The overall condition of product evaluation found a significant main effect of transparency for pasta packages ($F(1, 98) = 10.78, p < 0.01$). This was the only significant main effect for this construct, meaning that no interaction or main effect of product claim was found.

General product evaluation

A significant main effect was found for transparency on general product evaluation ($F(1, 98) = 7.03, p < 0.01$). This main effect showed in general that pasta packages with a non-transparent package ($M = 6,00; SD = 1,05$) were more positively evaluated compared to pasta packages with a transparent package ($M = 5,34; SD = 1,46$). Furthermore, for the pasta packages no significant main effect was found for product claim ($F(1, 98) = 2.49, p = 0.12$). No interaction effect was found between transparency and product claim ($F(1,98) = 0.88, p = 0.40$) for this variable.

Perceived luxury

A significant main effect was found for transparency on perceived luxury ($F(1, 98) = 11.07, p < 0.01$). This result concluded that pasta packages with a non-transparent package ($M = 5,81; SD = 0,98$) were perceived as more luxury than with a transparent package ($M = 5,02; SD = 1,36$). Furthermore, for pasta packages no significant main effect was found for product claim ($F(1, 98) = 0.14, p = 0.71$). No interaction effect was found between transparency and product claim ($F(1,98) = 0.05, p = 0.83$) for perceived luxury.

Taste expectation

A significant main effect was found for transparency on taste expectation ($F(1, 98) = 10.90, p < 0.01$). This result showed that pasta packages with a non-transparent package ($M = 5,94; SD = 0,99$) were perceived as more tasty compared to a transparent package ($M = 5,14; SD = 1,42$). A marginal main effect was found for product claim on taste expectation ($F(1, 98) = 3.22, p = 0.07$). This result showed that pasta packages without product claim ($M = 5,75; SD = 1,29$) were perceived as more tasty than packages provided with product claim ($M = 5,31; SD = 1,25$). No interaction effect was found between transparency and product claim ($F(1, 98) = 0.19, p = 0.66$) for taste expectation.

5.1.2 Perceived quality

Perceived quality was measured by the dependent variables perceived product quality and perceived brand quality. These two dependent variables explored the overall perceived quality of the products, perceived by the participants.

The overall condition of perceived quality found a significant main effect of transparency for pasta ($F(1, 98) = 4.45, p = 0.04$). This was the only significant main effect for this construct, meaning that no interaction or main effect of product claim was found.

Perceived product quality

A significant main effect was found for transparency on perceived product quality ($F(1, 98) = 3.95, p = 0.05$). This result showed that the quality of the pasta was perceived as more positively from the non-transparent package ($M = 5,99; SD = 0,94$) compared to the transparent package ($M = 5,59; SD = 1,09$). No main effect was found for product claim on perceived product quality ($F(1, 98) = 2.69, p = 0.10$). No interaction effect was found between transparency and product claim ($F(1, 98) = 0.03, p = 0.86$) for this variable.

Perceived brand quality

A significant main effect was found for transparency on perceived brand quality ($F(1, 98) = 4.39, p = 0.04$). Which concluded that the quality of the brand on pasta packages was perceived as more positively from the non-transparent package ($M = 6,25; SD = 0,93$) compared to transparent package ($M = 5,80; SD = 1,22$). Furthermore, no main effect was found for product claim on perceived brand quality ($F(1, 98) = 1.67, p = 0.20$). No interaction effect was found between transparency and product claim ($F(1, 98) = 0.30, p = 0.58$) for perceived brand quality.

5.1.3 Purchase intention

No main effect was found for transparency on purchase intention ($F(1, 98) = 1.70, p = 0.20$). A significant main effect was found for product claim on purchase intention ($F(1, 98) = 5.13, p = 0.03$). This result concluded that pasta packages were more disposed to purchase a package without product claim ($M = 5,75; SD = 1,52$) compared to packages with product claim ($M = 5,04; SD = 1,63$). No interaction effect was found between transparency and product claim ($F(1, 98) = 0.21, p = 0.65$) for purchase intention.

5.2 Cookies

5.2.1 Product evaluation

Product evaluation was measured by the dependent variables general product evaluation, luxury perception and taste expectation. These three dependent variables explored the overall product evaluation of the participants.

The overall condition of product evaluation found a significant main effect of transparency for cookie packages ($F(1, 98) = 5.16, p = 0.03$). Furthermore, a significant main effect of product claim was found for cookie packages ($F(1, 98) = 4.20, p = 0.04$). No interaction was found for this construct.

General product evaluation

A marginal main effect was found for transparency on general product evaluation ($F(1, 98) = 3.35, p = 0.07$). This result showed in general that cookie packages with a non-transparent package ($M = 5.87; SD = 0.94$) were more positively evaluated compared to a transparent package ($M = 6.21; SD = 0.95$). No significant main effect was found for product claim on general product evaluation ($F(1, 98) = 1.72, p = 0.19$). No interaction effect was found between transparency and product claim ($F(1, 98) = 1.05, p = 0.31$) for general product evaluation.

Perceived luxury

A significant main effect was found of transparency on perceived luxury ($F(1, 98) = 7.97, p < 0.01$). This result concluded that cookie packages with a non-transparent package ($M = 5.76; SD = 0.93$) were perceived as more luxury than with a transparent package ($M = 5.11; SD = 1.35$). No significant main effect was found for product claim ($F(1, 98) = 1.11, p = 0.30$). No interaction effect was found between transparency and product claim ($F(1, 98) = 0.04, p = 0.85$) for this variable.

Taste expectation

A marginal main effect was found for transparency on taste expectation ($F(1, 98) = 3.32, p = 0.07$). This result concluded that cookie packages with a non-transparent package ($M = 5.86; SD = 1.00$) were perceived as more tasty compared to a transparent package ($M = 5.38; SD = 1.15$). A significant main effect was found for product claim on taste expectation ($F(1, 98) = 6.26, p = 0.01$). This significant evidence showed that cookie packages without product claim ($M = 5.93; SD = 0.92$) were perceived as more tasty than provided with product claim ($M = 5.41; SD = 1.18$). No significant interaction effect was found between transparency and product claim ($F(1, 98) = 0.24, p = 0.63$) on taste expectation.

5.2.2 Perceived quality

Perceived quality was measured by the dependent variables perceived product quality and perceived brand quality. These two dependent variables explored the overall perceived quality of the products, perceived by the participants.

The overall condition of perceived quality found no significant main effects of transparency or product claim for cookie packages. No interaction effect was found for this variable.

Perceived product quality

No significant main effect was found of transparency ($F(1, 98) = 1.01, p = 0.32$) or product claim on perceived product quality ($F(1, 98) = 0.86, p = 0.36$) for cookie packages. Furthermore, no interaction effect was found between transparency and product claim ($F(1, 98) = 0.18, p = 0.67$) for this variable.

Perceived brand quality

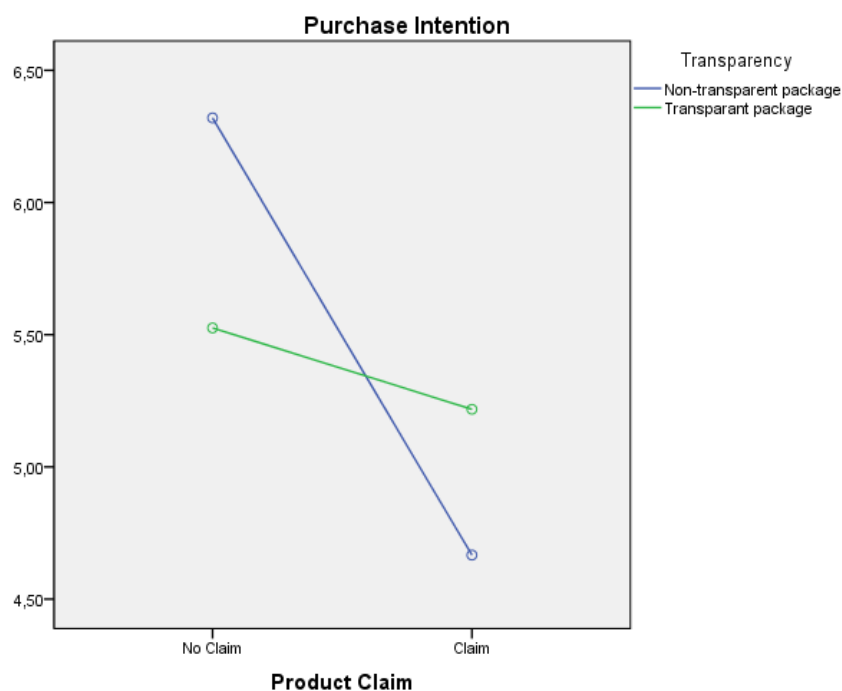
No significant main effect was found of transparency on perceived brand quality ($F(1, 98) = 2.25, p = 0.14$). A significant main effect was found of product claim on perceived brand quality ($F(1, 98) = 7.89, p < 0.01$). This result concluded that the brand of cookie packages without a product claim ($M = 6,27; SD = 1,00$) were perceived of better quality than with a product claim ($M = 5,65; SD = 1,23$). No interaction effect was found between transparency and product claim ($F(1, 98) = 0.04, p = 0.84$) on perceived brand quality.

5.2.3 Purchase intention

No significant main effect was found for transparency on purchase intention ($F(1, 98) = 0.15, p = 0.70$). A significant main effect was found for product claim on purchase intention ($F(1, 98) = 10.01, p < 0.01$). This result showed that the participants were more disposed to purchase cookie packages provided without product claim ($M = 5,92; SD = 1,37$) compared to cookie packages with product claim ($M = 4,95; SD = 1,78$).

The only significant interaction effect of this study was found for transparency and product claim on purchase intention ($F(1, 98) = 4.71, p = 0.03$). The intention to purchase the product was particularly strong if the cookie package without product claim was combined with a non-transparent package ($M = 6.32; SD = 0,83$). The package without product claim in combination with a transparent package resulted in lower scores ($M = 5.53; SD = 1.66$). The results for the cookie packages with claim were not as distinctive. Thus, the difference between the influences of the two conditions of product claims was more striking for the non-transparent cookie package. An overview of this interaction effect was presented in Graph 1.

Graph 1: Interaction effect on purchase intention



6. CONCLUSION & DISCUSSION

To what extent will transparency effect a consumer's product evaluation, quality perception and purchase intention in de food environment and will a product claim amplify such an effect?'

In this section, the research of this study will be answered. First, a short overview of the main findings and insights of the study are given. The discussion gives an explanation for these main findings and insights. The limitations from this study will be explained and possibilities for future research will be proposed. Finally, the practical implications will be referred.

6.1 Conclusion

The main focus of this study was to find out if and to what extent transparency influences a consumer's product evaluation, quality perception and purchase intention. The study also explored if a product claim will strengthen this effect. To examine the difference between product category in the food environment, a hedonic and utilitarian product were measured. It turned out that transparency had an effect on product evaluation, perceived quality and purchase intention.

Significant evidence of transparency explored that non-transparent packages were more preferred than transparent packages with regard to product evaluation and perceived quality. The amount of significant effects of transparency differ between hedonic (cookies) and utilitarian products (pasta). Cookie packages show less significant effects of transparency regarding to product evaluation and perceived quality than pasta packages. This means, that a transparent and non-transparent packaging could be useful for cookies, while a non-transparent package was strongly preferred for pasta. After product evaluation and quality perception consumers decide if they are going to buy pasta or cookies, but for purchase intention no significant evidence of transparency was found. The transparent and non-transparent packaging could be useful for cookies and pasta, during the intention to purchase.

To examine whether a product claim amplifies transparent product packages, the product package was provided with or without product claim. One significant interaction effect between transparency and product claim was found for purchase intention. It turned out that providing a product claim on the front side of a package did not strengthen the effect of transparent packaged products.

The main findings clarified that the hypotheses of this study were partially accepted. Transparent packages have a positive influence on consumer's product evaluation, perceived quality and purchase intention and could be useful, dependent of product category. However, the present study showed that a non-transparent package with printed food imagery remains to be an effective communicator, dependent of product category. The use of a product claim on a package was not preferred.

6.2 Discussion of the results

The field of product appearance was studied widely the last few years. Many studies related to sensory influences and package characteristics were conducted. These studies examined the influence on product evaluation, purchase intention and the final decision at the point of sale. Less research was performed about the visual impact of transparency with regard to food packages. The transparent design of product packages is increasingly growing, but in terms of research still in its initial stage. Transparent product packages were perceived as positive and negative by the consumers during their decision process. Certain influences of transparent product packages dependent of product category were found by previous researches. For that reason, this study will explain if transparent product packages have an influence on consumer's product evaluation, quality perception and purchase intention compared to non-

transparent packages with printed food imagery. It will be expected that transparency influences consumers by its clear package design and indicative appearance. The findings presented in this study show certain influence, but the issues needs to be discussed.

The results showed that transparent or non-transparent packages influences consumers, because in this study were found significant main effects of transparency. Contrary to the expectation, all significant main effects of transparency explored that non-transparent packages with printed food imagery were more preferred than transparent packages. These effects were only found for product evaluation and quality perception. That means, that a non-transparent package with printed food imagery was preferred during the decision process, when consumers evaluate products and perceives it's quality. An explanation for this finding might be the presentation of food. The food inside a transparent package needs to be presented in a correctly and appropriate way, to contribute to the product expectations and the overall appearance (Troy & Kenny, 2010). Not the colour of a plain package or the printed food image, but the real food is part of the exterior package design and perceived by the consumer. The package has nothing to hide, so also the less appealing, messy or vulnerable food characteristics could be perceived, in contrast to a food image. A food image shows always the same proper, sophisticated image of the food and is less indicative. An image is chosen by a marketer and mimics the reality of the food to catch a consumers attention and creates a great flavor and taste expectation. The participants in this study said 'The non-transparent packaging is more appealing, because of its attention-grabbing picture'. Another explanation might be that consumers were accustomed to non-transparent packages and have their own preference for package design.

No significant evidence for transparency was found for purchase intention. When consumers during their decision process do have the intention to purchase the product, the transparent package was just as likely as the non-transparent package. The transparency of a package did not influence consumers when they decide to buy, try or recommend the product, based on what can be perceived from the exterior design of a package. An explanation for this finding might be that the intention to purchase depends on several other variables, just as the price of the product, but also their judgement after tasting the product.

When it comes to product type the significant effects of transparency differ for product evaluation and quality perception in the present study. For utilitarian products many significant main effects of transparency were found, but for hedonic products particularly nothing. This means, that a non-transparent package with printed food imagery was preferred for pasta, but for cookies a both packages were useful when consumers evaluate products and perceives it's quality. This finding supports the expectation that transparent packages were more pronounced for hedonic products compared to utilitarian products. An explanation for this might be explained by Deng and Srinivasan (2013), a transparent package was not preferred for every product; it's depending on product category and food appearance. The results showed that for the utilitarian product pasta, a non-transparent package was preferred. Pasta is just pasta, an ingredient, indication of the product and the visual appearance is less important. Therefore, a sophisticated food picture on a non-transparent package will have more influence during the decision process than a transparent package which presents the product. Perhaps for the hedonic product cookies, a transparent or non-transparent were useful packages showed by the results of this study. Cookies are a final product, the visual appearance and indication of the product are more important and might be influential. The visual appearance of seeing the product through a transparent package or by a food picture will positively influence a consumer's expectation and catches attention. The visual appearance contributes to the identification of the product. The participants said that 'the amount of chocolate and nuts can be perceived better from the transparent package', 'the transparent package resembles a bakery package and creates a certain quality' and 'the non-transparent package catches your attention, you want to eat it'. Another explanation for

the differences of transparency between product categories is food imagery. The imagery of a package might be misleading and can overestimate expectations (Underwood & Ozanne, 1998). The utilitarian product category is practical, people know what they could expect, but this expectation does not apply to the hedonic product category. For example, a food image can distort the expectation of freshness, amount of chocolate, pureness and natural taste of the product. It is therefore expected, that for products where naturalness, freshness and sustainability is important a transparent package is preferred. A consumer wants to perceive such product characteristics before they evaluate or buy a product.

Finally, this study expected that a product claim amplified the effect of transparent product packages when it concerns to product evaluation, perceived quality and purchase intention. The results showed that a product claim did not strengthen any effect of transparent packages. Despite the fact that the interactions between product claim and transparency showed a positive effect, a product claim was not preferred on packages in this study. One interaction effect was found. The results showed that a non-transparent cookie package without a product claim was preferred during the intention to purchase. For transparent cookie packages no significant difference between a package provided with or without product claim was determined. A possible explanation might be explained by the fact that the relation between transparency and product claim was not studied before. A product claim is not always meant to be an expressive seller or benefit to the product and has to be considered well by marketers (Cousté, et al., 2012).

6.3 Limitations and future research

This research has some limitations regarding to the measurement of the product category, the stimulus material, the effect of a product claim and the effect of transparency. These limitation will be explained.

In order to measure visually neutral opinions from people towards food packages, it was needed to design stimulus material. Therefore, new product packages were created with a fictitious brand related to the real packages in-store. The packages only differ in transparency (fully transparent or non-transparent with food imagery) and product claim availability (product claim or no product claim). This product design had certain influence on the visual appearance of the product, caused by the significant impact of aesthetics shown in this study. An explanation for this might be the fact that this study performed no pre-test of the real mock-up packages. Informal talks with participants confirmed that the non-transparent packages were seen as more favorable and attractive compared to the transparent packages. Cited one of the participants 'The food imagery printed on the non-transparent package was really nice and attractive'. It is recommended to pre-test the product designs for future research. A pre-test will indicate a consumers' first associations and measures the impact of a products design. When people only liked the non-transparent packaging or just the transparent packaging, it is expected that this certain package will be evaluated as more favorable. By evaluating several packages during a pre-test, a better interpretation and visual stimuli can be rated before the main study started.

The pre-study about the chosen product categories was limited in this study. Two different product categories were evaluated, because previous research indicated different impacts of product categories in the food industry (Peters-Texiera & Badrie, 2005). In order to restrict the choice in this study an hedonic product (a final product) and a utilitarian product (an ingredient, useful or practical product) were chosen from 11 well known products with a longer shelf-life. These products were already available and provided with a transparent package and non-transparent package. For future research, it would be interesting to evaluate other products to provide new or other insights regarding transparency. Such as for new, authentic or fresh products, it would be expected that people wants to see the product. For instance, from a new product with a transparent package can be noticed how the product

looks like, the food appearance might be influential. For fresh products with a transparent package seeing the freshness, but also the color of a product might be important during the decision process.

Another limitation of this study was the independent variable product claim. One product claim related to quality and taste was created for cookies and pasta. A product claim was indicated as a still, expressive communicator, which influences consumers' evaluation and was seen as a benefit (Cousté, Martos-Partal, & Martínez-Rios 2012). Significant main effects of product claim were found and turned out that product packages without a product claim were preferred. A product claim could not be used for several products on several packages, first it had to be generally acceptable, scientifically proven, understood by the average consumer and believable (de Bruijn, 2009), secondly the degree of importance and persuasiveness towards the product has to be well considered. In the present study the product claim 'Koninklijk genieten', was not scientifically proven and people did not always believe the claim. It is recommended to pre-test several product claims to discover which product claim suits to the product, the brand and its visual appearance.

Finally, for future research it would be interesting to research the field of transparency. In this study only the fully transparent and fully non-transparent package with product imagery in the food environment for specific product categories was examined. Many other product categories are available in the supermarket. Therefore, it would be imperative to indicate if, how and when the effect of transparency is an effective and worthwhile package characteristic for marketers or designers in the food industry.

6.4 Practical implications

The practical implications are formulated for marketers, product managers, product designers and food producers, because this study did not only provide if package designs in different ways contribute to sales and marketing, but also to provide designers insight into if transparency is useful. It appears that there is a massive growth of transparent packages in the food industry, but less previous research investigated if this innovative design is effective and worthwhile to use. In general, it is shown that the visual perception of product packages is important. This research indicated that transparent packages and non-transparent packages with food imagery are perceived as positive designed packages by consumers. Still the non-transparent packages with food imagery are in general more preferred. For cookies transparent packages and the non-transparent package are useful, probably because the visual appearance and the indication of the cookies has certain impact on consumers. Presenting a product claim on the front side of a package to strengthen a possible impact of transparency, is not recommended by this research.

Practical, pasta products with non-transparent packages without a product claim increases marketing based on product evaluation and perceived quality. Cookie products with non-transparent or transparent packages without product claim increases marketing based on product evaluation and perceived quality. Also both packages (transparent and non-transparent) without a product claim will increase sales based on purchase intention. Product designers, managers, producers and marketers should take several considerations before creating transparent product packages. Such as, product category, product type, aim of the package and visual appearance. When transparent package designs will be used, a pre-test is preferred to indicate a consumers first associations about the visual appearance, product and brand. The pre-test gives insight if the a transparent design of the product package fits to the expectations of the general consumer during the decision process. A marketer has to examine if transparent product packaging will be an advantage for their product category.

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APPENDICES

1. Pre-test product choice – Research design and Answers

Er zijn verschillende redenen waarop je keuzes maakt, ook in de supermarkt. Er is altijd een reden of achterliggende gedachte waarom je juist kiest om dat product mee te nemen. Het ziet er lekker uit, je vertrouwd de kwaliteit, het is iets nieuws om te proberen of omdat je het altijd mee neemt. Zo zijn er nog meer redenen. Ik laat je zo meteen allerlei verschillende soorten producten zien. Elke keer pak ik 2 producten. Eén van deze producten heeft een transparante verpakking, de ander niet. Hierdoor kun je het product zelf waarnemen. Graag zou ik willen weten welke impressies en/of welke gedachten er bij je naar boven komen wanneer je deze transparante verpakking ziet. Daarbij is het van belang dat je de producten niet aanraakt, maar echt het product/de verpakking waarneemt door er naar te kijken. Welke associaties en waarnemingen zie jij in verbinding tot deze producten. Het is met name even van belang dat prijs, merk en hoeveelheid hier geen rol spelen. Probeer je met name te focussen op het de product verpakking

Transparante verpakking van koekjes

- Joyce: Ziet er lekker uit, lijkt duurder, vers, smakelijker, exclusief
- Karin: Ambachtelijk, luxe, duurdere prijs, versere koekjes, korter houdbaar
- Charles: Ik kan het product zien, luxere uitstraling, ambachtelijk.
- Daphne: Ziet er raar, koekjes zien er slof uit.

Transparante verpakking van tagliatelle

- Joyce: Leuker, vezelrijk, dikke slierten, smakelijk
- Karin: Product goed zichtbaar, luxe uitstraling, dikke slierten, vollere uitstraling, lekkerder
- Charles: Verschil in vorm, ziet er rommelig uit, de doos ziet er strakker uit, compact.
- Daphne: Niet veel verschil, kan weinig aan verkeerd zijn. Geschikt product, ziet er natuurlijk uit

Transparante verpakking van bolognese saus

- Joyce: Vies, ziet er niet smakelijk uit en opvallend product in negatieve zin
- Karin: Niet smakelijk, niet aantrekkelijk, slechte uitstraling
- Charles: Minder mooi, minder Italiaans, ziet er niet smakelijk uit.
- Daphne: Niet smakelijk, valt op in negatieve zin.

Transparante verpakking van crackers

- Joyce: Heel kwetsbaar, product is veel kapot, waardoor het minder aantrekkelijk is. Wel een heel gezond en voedingswaardig product.
- Karin: Kwetsbare verpakking, veel kapot, minder aantrekkelijk
- Charles: Dichte verpakking beter verpakt, behoudt andere versheid
- Daphne: Kwetsbaar door de kapotte verpakking, je kunt de crackers zien.

Transparante verpakking van pinda's

- Joyce: Lekker uit, waardoor het gezonder lijkt, luxer en exclusiever, puur en smakelijk.
- Karin: Goed zichtbaar, grote van de pinda duidelijk, kleur, lekkerder uit
- Charles: Kan de grote van de pinda's zien, ziet er verser uit
- Daphne: Maakt niet zoveel uit

Transparante verpakking van muesli

- Joyce: Gezond, veel vezels, maar niet perse lekker. Ziet er droog uit, niet smakelijk.
- Karin: Ziet er niet echt lekker uit, lijkt poederig, zak lijkt een beetje stoffig
- Charles: Minder aantrekkelijk, saai, kleuren passen niet bij wat erin zit, minder gezond
- Daphne: Ziet er droog uit, niet lekker, niet smakelijk. Bij fruit denk ik aan vers.

Transparante verpakking van stukjes ananas

- Joyce: Ziet er minder vers uit, de kleur zorgt ervoor dat er misschien veel kleurstoffen in zitten
- Karin: Lijkt erg geel, minder smakelijk en aantrekkelijk, waardoor minder vers, lijkt of er meer kleurstoffen in zitten.
- Charles: ziet er lekker uit, kan zien wat er in zit geen oneven eden en het product is goed
- Daphne: Vindt de ananas er niet lekker uit zien, wel kun je de kwaliteit meteen zien.

Transparante verpakking van ontbijtkoek

- Joyce: Weinig verschil, ziet er droger uit waardoor minder luxe.
- Karin: Geen verschil, lijkt minder duur
- Charles: Ik kan duidelijk zien wat erin zit, duidelijk zien wat ik koop. Apart verpakt meteen zichtbaar. Kwalitatief beter, vergelijk het met een bakker
- Daphne: Beide wel lekker

Transparante verpakking van rode kool

- Joyce: Deze verpakking komt beter over omdat het verser lijkt, door het glas. Duurder aanzicht
- Karin: Voorkeur naar transparante pot, kleur komt beter over, je ziet het product.
- Charles: Kan het product zien, makkelijk in gebruik, goed zichtbaar, meer kwaliteit
- Daphne: Lijkt lekker vers, de dichte verpakking ziet er ook vies uit, schijnt gezonder te zijn.

Transparante verpakking van witte bonen in tomatensaus

- Joyce: je kunt het product goed zien, dat zorgt ervoor dat je weet je wat je koopt. Duurder aanzicht
- Karin: voorkeur naar de transparante pot, de pot ziet er verser uit, je kunt zien wat je meeneemt.
- Charles: kan het product goed zien, meer kwaliteit, makkelijk in gebruik, goed zichtbaar, verser
- Daphne: ziet er vies uit, maar dat lust ik ook niet.

Transparante verpakking van spaghetti

- Joyce: Kwetsbaar product, niet kwalitatief, beetje afkeurend.
- Karin: ziet er goedkoop uit, minder kwalitatief en minder smaak, kwetsbaar door dunne sliertjes.
- Charles: maakt voor mij geen verschil, ziet er gewoon natuurlijk uit. Doosje makkelijk weg te pakken
- Daphne: Maakt voor mij geen verschil, ziet er gewoon natuurlijk uit

2. Questionnaire main study

All questions are measured by a 7-point Likert scale.

1. Welke verpakking ziet de participant (zelf invullen)

- ☐ Dichte verpakking
- ☐ Dichte verpakking + product claim
- ☐ Transparante verpakking
- ☐ Transparante verpakking + product claim

Beste participant,

Op de tafel voor u bevinden zich twee producten die u zou kunnen tegenkomen in de supermarkt. Graag zou ik u willen vragen als eerste de **koekjesverpakking** aandachtig te bekijken en hierover de vragen te beantwoorden. Er wordt gevraagd naar uw mening, antwoorden zullen daarom niet goed of fout worden bevonden.

2. Het product oogt

Mooi	—	Lelijk
Aangenaam	—	Onaangenaam
Prettig	—	Onprettig
Aantrekkelijk	—	Onaantrekkelijk
Verleidelijk	—	Afstotelijk
Uitnodigend	—	Afwijzend
Luxe	—	Standaard

3. Ik verwacht dat dit product

Smakelijk is	—	Smakeloos is
Ambachtelijk smaakt	—	Niet ambachtelijk smaakt
Puur smaakt	—	Niet puur smaakt
Natuurlijk smaakt	—	Onnatuurlijk smaakt
Lekker is	—	Vies is
Vers is	—	Muf is
Duur is	—	Goedkoop is

4. Hoeveel denkt u dat de prijs bedraagt van dit product?

- ☐ Open vraag

5. De kwaliteit die dit product uitstraalt komt op mij over als

Betrouwbaar	—	Onbetrouwbaar
Overtuigend	—	Niet overtuigend
Oprecht	—	Niet oprecht
Acceptabel	—	Onacceptabel
Armoedig	—	Uitstekend

6. Het merk komt op mij over als

Betrouwbaar	—	Onbetrouwbaar
Geloofwaardig	—	Niet geloofwaardig
Oprecht	—	Niet oprecht

7. Wanneer ik kijk naar dit product in zijn geheel, is dit product van

Slechte algehele kwaliteit	—	Uitstekende algehele kwaliteit
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8. Ik zou dit product graag willen uitproberen

Helemaal mee eens – Helemaal mee oneens

9. Ik zou serieus overwegen om dit product te kopen

Helemaal mee eens – Helemaal mee oneens

10. Ik zou dit product aanraden aan anderen

Helemaal mee eens – Helemaal mee oneens

Beste participant,

Op de tafel voor u bevinden zich twee producten die u zou kunnen tegenkomen in de supermarkt. Graag zou ik u willen vragen als eerste de **pastaverpakking** aandachtig te bekijken en hierover de vragen te beantwoorden. Er wordt gevraagd naar uw mening, antwoorden zullen daarom niet goed of fout worden bevonden.

11. Het product oogt

Mooi	–	Lelijk
Aangenaam	–	Onaangenaam
Prettig	–	Onprettig
Aantrekkelijk	–	Onaantrekkelijk
Verleidelijk	–	Afstotelijk
Uitnodigend	–	Afwijzend
Luxe	–	Standaard

12. Ik verwacht dat dit product

Smakelijk is	–	Smakeloos is
Ambachtelijk smaakt	–	Niet ambachtelijk smaakt
Puur smaakt	–	Niet puur smaakt
Natuurlijk smaakt	–	Onnatuurlijk smaakt
Lekker is	–	Vies is
Vers is	–	Muf is
Duur is	–	Goedkoop is

13. Hoeveel denkt u dat de prijs bedraagt van dit product?

- Open vraag

14. De kwaliteit die dit product uitstraalt komt op mij over als

Betrouwbaar	–	Onbetrouwbaar
Overtuigend	–	Niet overtuigend
Oprecht	–	Niet oprecht
Acceptabel	–	Onacceptabel
Armoedig	–	Uitstekend

15. Het merk komt op mij over als

Betrouwbaar	–	Onbetrouwbaar
Geloofwaardig	–	Niet geloofwaardig
Oprecht	–	Niet oprecht

16. Wanneer ik kijk naar dit product in zijn geheel, is dit product van

Slechte algehele kwaliteit – Uitstekende algehele kwaliteit

17. Ik zou dit product graag willen uitproberen
Helemaal mee eens – Helemaal mee oneens

18. Ik zou serieus overwegen om dit product te kopen
Helemaal mee eens – Helemaal mee oneens

19. Ik zou dit product aanraden aan anderen
Helemaal mee eens – Helemaal mee oneens

Wanneer u boodschappen gaat doen in de supermarkt en u ziet een nieuw product, waar let u dan op.

20. Als ik boodschappen haal bekijk ik de verpakking van het product aandachtig
Helemaal mee eens – Helemaal mee oneens

21. Ik stel het op prijs als ik aan de hand van een plaatje of door middel van transparantie kan zien hoe het product eruit ziet
Helemaal mee eens – Helemaal mee oneens

22. Ik lees de informatie die beschikbaar wordt gesteld op de voorzijde van de verpakking
Helemaal mee eens – Helemaal mee oneens

23. Ik lees welke ingrediënten het product bevat
Helemaal mee eens – Helemaal mee oneens

24. Ik lees welke voedingswaarden het product bevat
Helemaal mee eens – Helemaal mee oneens

25. Heeft u wel eens koekjes gehad?
☐ Ja
☐ Nee

26. Hoe vaak eet u koekjes?
☐ Nooit
☐ Af en toe (maandelijks)
☐ Soms (Wekelijks)
☐ Vaak (een aantal keer per week of vaker)

27. Heeft u allergieën waardoor u bepaalde koekjes niet eet?
☐ Ja
☐ Nee

28. Heeft u wel eens pasta gehad?
☐ Ja
☐ Nee

29. Hoe vaak eet u pasta?
☐ Nooit
☐ Af en toe (maandelijks)
☐ Soms (Wekelijks)
☐ Vaak (een aantal keer per week of vaker)

30. Heeft u allergieën waardoor u bepaalde pasta niet eet?

- ☐ Ja
- ☐ Nee

31. Wat is uw geslacht?

- ☐ Man
- ☐ Vrouw

32. Wat is uw leeftijd?

- ☐ Open vraag

33. Wat is uw hoogst afgeronde opleiding

- ☐ Basisonderwijs
- ☐ VMBO
- ☐ HAVO
- ☐ VWO/Gymnasium
- ☐ MBO
- ☐ HBO
- ☐ WO