MSc Thesis - Louise Krümpelmann

The influence of store environment on customers' satisfaction and purchase behaviour

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The influence of store environment on customers' satisfaction and purchase behaviour

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Preface

Hereby I present you my master thesis. I gained a lot of knowledge these past months about supermarket strategies, store environments and about the use of SPSS. Thereby, I learned a lot about doing research, gathering data, working independently and being creative. It was a pleasure to do research and to write my thesis. I would like to thank several people who made this a great experience. First of all, my supervisors from Wageningen University: Herman Kok and Gerben van der Velde. Thank you for providing expertise, guidance, advice and all the valuable feedback. Also, thank you especially for the motivation and enthusiasm. Because of your enthusiasm and the pleasant meetings, I enjoyed working on my thesis and was motivated to deliver something valuable. Lastly, thank you for the help with SPSS, I learned a lot and even enjoyed working with this software.

Further, I would like to thank all my friends and family who helped me with the data collection and supported and motivated me during this this research. Also, I would like to thank my fellow students who helped me improving this paper and for their insights.

Lastly, I would like to thank all the supermarket managers who were willing to participate in this study, took the time to give me broad and valuable answers and were helpful when I was conducting the survey.

For now, I hope you will enjoy the reading and be able to maximally profit from the content. Hopefully, it will bring you as much as it did for me. If there are any questions, please feel free to contact me.

Louise Krümpelmann

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Abstract

This study aims to determine how ambient factors (lighting, music and scent), design factors (cleanliness, colour, display, layout and signs) and social factors (crowding and personnel) of the store environment influence customers' satisfaction and their purchase behaviour. In order to get an overview of how to conceptualise and measure these store elements, customer satisfaction and purchase behaviour, a literature study was conducted. Consequently, both qualitative and quantitative research was conducted. The study draws on a sample of customers and managers of different supermarkets (both discounters and premium supermarkets) in Germany and The Netherlands. Managers were interviewed about the use of the store environment elements and their experience of how these elements influence customer satisfaction and purchase behaviour. Afterwards, a survey was conducted among customers of the same supermarkets. The questionnaire consisted of demographic questions, customer experience of the store environment elements and eventually about their overall satisfaction with the supermarket. The data retrieved from the interviews was coded and put into tables. To find out the predictors for customer satisfaction, a factor analysis and multiple regression analysis were conducted with the data retrieved from the questionnaire. Two factors appeared, being 'Tangible elements' and 'Intangible elements'. These two factors were regressed against customer satisfaction and indicated a significantly positive effect, explaining 34,9% of the variance of customer satisfaction. The tangible elements had a stronger effect (B=0.588) on customers satisfaction, than the intangible elements (B=0.331). Furthermore, customers' income affects customers' satisfaction negatively (B=-.075) and explaining 1.8% of its variance. According to the managers of the supermarkets, lighting, cleanliness, crowding and personnel are most important for customer satisfaction, whereas cleanliness, displays and personnel are the main influencers of the purchase behaviour of customers. Following, no significant differences were found in the store evaluations between countries and supermarket formula.

Executive summary

This study aims to determine how ambient factors (lighting, music and scent), design factors (cleanliness, colour, display, layout and signs) and social factors (crowding and personnel) of the store environment influence customers' satisfaction and their purchase behaviour in supermarkets. In order to get an overview of how to conceptualise and measure these store environment elements, customer satisfaction and purchase behaviour, a literature study was conducted. Consequently, both qualitative and quantitative research were combined to research the relationships between these concepts. The study draws on a sample of customers and managers of different supermarkets (both discounters and premium supermarkets) in Germany and The Netherlands. The managers of the supermarkets were interviewed to gain insight in how the elements are used in their supermarkets and the influence they experienced on customers' satisfaction and purchase behaviour. Afterwards, a survey was conducted among customers of the same supermarkets. The customers were asked to fill in a questionnaire, which consisted of demographic questions, questions about their experience with the store environment elements and eventually a question about their overall satisfaction with the supermarket. The interviews were coded and put into tables. To find out the predictors for customer satisfaction, a factor analysis and multiple regression analysis were conducted with the data retrieved from the questionnaire. Two factors appeared, being 'Tangible elements' and 'Intangible elements'. These two factors were regressed against customer satisfaction and indicated a significantly positive effect, explaining 34,9% of the variance of customer satisfaction. The tangible elements had a stronger effect on customers satisfaction (B=.576), than the intangible elements (B=.317). This implies that the evaluation of de tangible elements has greater impact on the customer satisfaction than the evaluation of the intangibles. Controlling for the customer demographics (gender, age, income and educational level) showed that only customers' income affects customers' satisfaction negatively (B=-.075), explaining 1.8% of its variance. Furthermore, no significant differences were found in the store evaluations between countries (i.e. Germany and the Netherlands) and supermarket formula, being premium or discount. According to the managers of the supermarkets, lighting, cleanliness, crowding and personnel are most important for customer satisfaction, whereas cleanliness, displays and personnel are the main influencers of the purchase behaviour of customers.

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1 Introduction

Retailers use unique characteristics in the physical environment of their store to influence consumer behaviour. Unique characteristics can be, among others, store environment elements which are communicated by in-store marketing, which includes the layout of the store, presentation of the products and the allocation of the store space (Zentes, Morschett, & Schramm-Klein, 2017). Retailers pay most attention to the physical environment, in comparison to wholesalers and manufactures, because this is the place where the final goods are bought (Kotler, 1973). The place where a product is consumed or bought is an aspect of the total product. This aspect can be very influential in the purchase decision of customers, which makes it an important marketing tool for retailers (Kotler, 1973). The physical environment consists of different store environment elements. These elements consist of background characteristics of the store environment (Bitner, 1992), design factors and social factors (Baker, Grewal, & Parasuraman, 1994). Store environment and the emotional state are, among others, determining factors of the customer's purchase behaviour (Sherman, Mathur, & Smith, 1997). In other words, the number of purchases and the time and money spend in a store can be higher (than the customer intended), due to the effect of a pleasant shopping experience induced by the store environment elements (Donovan, Rossiter, Marcoolyn, & Nesdale, 1994). Already a lot of research has been conducted regarding the relation between store environment elements and the customers' satisfaction (Bloemer & Odekerken-Schroder, 2002; Han & Ryu, 2009) and their purchase behaviour (Donovan et al., 1994; Morschett, Swoboda, & Foscht, 2005; Sherman et al., 1997; Varley, 2014).

1.1 Problem statement

A substantial body of knowledge on different store environment elements and their impact on customer satisfaction and purchase behaviour is available. However, there are several gaps that this research aims to close. Only limited literature is provided about the store environment elements regarding the use in supermarkets and consequently the effect on customers' satisfaction. Researchers examined only one or a few elements in relation with customer satisfaction. However, the important predictors in a group of elements that influence customer satisfaction is not known. Thereby, limited literature is available about the direct relation between the elements and the purchase behaviour, because past studies use an intermediate step, like internal emotions (Donovan et al., 1994; Kotler, 1973; Mohan, Sivakumaran, & Sharma, 2013; Sherman et al., 1997). This study examines this direct relation. Further, little research is conducted that focusses specifically on the store environment of supermarkets, since prior studies mainly focus on hospitals, restaurants, specialty stores or retailers in general. Another interesting point is the fact that the focus of retailers on enhancing the shopping experience by the store environment often does not correspond to the customer experience with the store environment (Bäckström & Johansson, 2006). Examining this contradiction can help store managers improve the shopping experience for customer because the managers know what to focus on and what is valuable for customers regarding the store environment.

1.2 Objective and research questions

The goal of this research is to determine the influence of the store environment of supermarkets on customer' satisfaction and their purchase behaviour. A main research question and several sub questions are used to guide this research. The main research question that is used in this research is:

"To what extent does the perception of the store environment of different supermarkets relate to customer satisfaction and their purchase behaviour according to both customers and store managers?"

The sub questions that are answered to solve the main research question are:

1. How can the different store environment elements of supermarkets be conceptualised and measured?
2. How can customers' satisfaction and purchase behaviour be conceptualised and measured?
3. How do customers of different supermarkets perceive different store environment elements?
4. How do supermarket customers respond to their perception of the different store environment elements in terms of satisfaction and purchase behaviour?

This paper starts with an overview of the available literature of store environment elements, customers' satisfaction and purchase behaviour. Consequently, the store environment elements, customers' satisfaction and purchase behaviour are conceptualised and quantified. Then, the methods of data collection and analyses, for both qualitative and quantitative research, are discussed, followed by the conceptual model. The qualitative and quantitative results are presented and explained, as well as the conclusion and discussion.

2 Literature

The literature study consists of conceptualising the three store environment factors and the elements individually. Besides conceptualising, the attributes of the elements and the effects on consumer responses and behaviour are discussed. Furthermore, customers' satisfaction and purchase behaviour are conceptualised, and different methods of measuring are discussed. Also, the demographics of customers in relation with satisfaction and purchase behaviour is presented and the supermarkets are introduced by presenting the format of the supermarkets and some background information.

2.1 The store environment

The store environment can be divided into three categories of design elements: ambient factors, design factors and social factors (Baker, Grewal, & Parasuraman, 1994). The different elements of these categories can be designed in various ways to ultimately create the store environment.

2.1.1 Ambient factors

Ambient factors are "nonvisual" and can be defined as "background conditions" in the environment (Baker et al., 1994). This includes elements like temperature, lighting, noise, music and scent (Bitner, 1992). These elements are aspects of the store environment which are less tangible in nature (Wakefield & Baker, 1998). Sherman et al. (1997) measured this factor in terms of pleasant-unpleasant, relaxed-tense, dull-bright and pleasant smelling-unpleasant smelling, and showed that the ambience affects arousal of customers in a store positively. The store environment elements that are part of the ambient factors are individually described below.

Lighting

Lighting is one of the components of the ambient factors, which creates ambience in a store (Custers, De Kort, Ijsselsteijn, & De Kruiff, 2010). Different classes of lights can be used in stores: daylight, incandescent, fluorescent and light-emitted diodes (LED) lighting (Hinks & Shamey, 2011). Lighting is used in stores to highlight certain products, create dramatic effects and to let the store appear bright and inviting (Varley, 2014). Furthermore, it is used to influence purchase behaviour (Areni & Kim, 1994; Summers & Hebert, 2001) and the emotions of customers (Quartier, Vanrie, & Van Cleempoel, 2014). The influence and effect of lighting on customer response and behaviour can be measured by different aspects. Areni & Kim (1994) and Summers & Hebert (2001) measured lighting in terms of intensity levels ('soft' versus 'bright' lighting). Summers & Hebert (2001) considered also another aspect in their study, being the colour of lighting. The colour of lighting can influence how customers perceive the lighting in the store in terms of warmth (Han & Ryu, 2009; Quartier et al., 2014). Furthermore, Sherman et al. (1997) measured lighting in relation with purchase behaviour, by conducting a survey. Customers evaluated whether the store was well lit and correctly lit (dull-bright), as well as the pleasantness of the light in the store. In the study of Schielke (2010), a survey was conducted in which participants evaluated lighting in terms of 'bright–dark', 'high-contrast, lighting–diffuse lighting' and 'cold–warm'. Custers et al. (2010) used a more extended lighting attributes for measuring, namely brightness, contrast, glare and sparkle. Studying the effect of lighting on customer responses and behaviour, Wakefield & Baker (1998) found a non-significant effect. They discussed that consumers do not notice lighting in the store environment, unless they perceive it as unpleasant.

Music

Music is an element of the store environment that can be easily controlled, and can be inexpensive to change (Wakefield & Baker, 1998). Previous studies about music in stores focused on the influence of music on the shopping experience and consumer behaviour. Several studies confirmed that music provides pleasure and arousal, and also influence the purchase behaviour of customers. Music was evaluated and examined by different attributes: familiarity, genre, harmony, mode, pitch, preference, rhythm, tempo and volume (Areni & Kim, 1993; Bruner, 1990; Herrington, 1996; Milliman, 1982; Yalch & Spangenberg, 2000). These attributes individually influence aspects of customers' emotions and purchase behaviour. For instance, time spent and patronage can be positively influenced by the familiarity of music that consumers have (Garlin & Owen, 2006; Yalch & Spangenberg, 2000), while the genre of the chosen music can have an effect on the money spent (Areni & Kim, 1993). The time and money that customers spent in a store is also affected by the preference of customers for the background music (Herrington, 1996) and by the tempo (Milliman, 1982). Thereby, tempo also affects the arousal of customer (Garlin & Owen, 2006). Furthermore, music has a positive effect on excitement of customers and the desire to stay in a store, which influences the intentions to return (Wakefield & Baker, 1998). Subsequently, music increases the intentions to return because it improves the evaluation of the environment and service quality of customers (Demoulin, 2011). Although a lot of research is done on music, Hynes & Manson (2016) point out that music in supermarkets has no effect or only a small effect on a very small number of customers because their awareness of the music in the supermarket might be exceptional.

Scent

Store managers use scent to create a specific store atmosphere. The presence of a scent is more important than the nature according to Spangenberg, Crowley, & Henderson (1996), because it's presence influences the purchase behaviour in terms of time spending and perception of the waiting line. Scent also influences the money spending of customers by enhancing the perception of the environment and product (Chebat & Michon, 2003). Besides these behavioural effects, scents also elicit certain feelings. For example, the use of neutral or pleasing scents in a store enhances the reactions of the consumers on the merchandise and the store environment (Spangenberg et al., 1996), and spreading the smell of bread in supermarkets creates a 'homely' feeling (Varley, 2014). Both studies used the terms intensity and fragrance to measure the influence of scent. Another aspect is the association of the scent with the products or the store, for example the scent of bread in a bakery. Associated scents can enhance the purchase behaviour of customers (Ballantine, Jack, & Parsons, 2010). Furthermore, scent is often used in combination with other elements, for example music or displays (Fiore, Yah, & Yoh, 2000; Mattila & Wirtz, 2001). These combinations affect the customer behaviour.

2.1.2 Design factors

While the ambient factors are defined as non-visual elements, the design factors are stimuli that exist at the forefront of our awareness, such as floor- and wallcovering, colours, cleanliness, aisles, layout, signs etc. (Baker et al., 1994). Some of these design factors communicate cues regarding the meaning of the store and the norms and expectations for the behaviour of the store (Bitner, 1992). Design factors can be measured in terms of large-small, roomy-cramped, colourful-drab, unattractive–attractive, dirty–clean, comfortable-uncomfortable, cluttered aisles–uncluttered aisles, crammed merchandise–well-spaced merchandise, impressive interior-unimpressive

interior and well-organized layout–unorganized layout. Additionally, design factors positively influence the pleasure of customers in a store (Sherman et al., 1997).

Cleanliness

Cleanliness can be defined as "the state or quality of being clean or being kept clean" (Oxford Dictionary, n.d.) and is perceived as very important by frequent and occasional shoppers in traditional supermarkets (Carpenter & Moore, 2006) or for the selection of food stores (Krukowski et al., 2013). When measuring the perception of cleanliness, dimensions which can be used for a supermarket are "internal", "external" and "personnel". Internal refers to the inside of the store (furniture, carpet, etc.), external to the outside of the store (building, parking lot, etc.) and personnel refers to the staff. The customers can be asked about their perception on how clean/dirty/tidy these dimensions are (Barber & Scarcelli, 2010). This study showed that for the overall experience of customers, cleanliness in both the in- and outside is important. This influences the re-purchase intentions of customers. Also material is related to the perception of cleanliness, for example using materials as glass or ceramic in the store environment can create a clean and hygienic feeling by customers (Varley, 2014).

Colour

Retailers use different colours in their store to create a certain atmosphere for the customers (Babin, Hardesty, & Suter, 2003; Crowley, 1993). More extreme colours (blue and red) were perceived by consumers as a more active environment than when the colours yellow and green were used (Crowley, 1993). In this study, several colours were measured in relation with the perceived feelings of participants in terms of boring-stimulating, tense-relaxed, bad-good, etc. Recently, the study of Zentes et al. (2017) showed that blue/green and white appear more calm, cool and clean, while red, orange and yellow are more stimulating and arousing, which creates feelings of warmth, action and in some case aggression. Babin et al. (2003) showed that a blue interior was more in favour by consumers then the orange coloured interior. They measured the evaluation of colour in terms of bad-good, favourable-unfavourable, not likable-likeable and not acceptable-acceptable.

Display

Fiore, Yah, & Yoh (2000) define a product display as a "consciously designed presentation of selected merchandise in a defined area (e.g., storefront window or end of aisle), highlighting the products and creating a mood and/or message with the intent to positively affect consumers' approach responses". Products or assortments can be displayed in various ways. The display of an assortment can be arranged in an organised or random way (Hoch, Bradlow, & Wansink, 1999). Product (lines) can be placed horizontally or vertically in the shelves and be located in the centre or sides of the aisle (Pizzi & Scarpi, 2016). In order to measure the perception of the customers regarding the displays, customers can be asked about the attractiveness of the displays which is also related to the purchase behaviour of customers (Mohan et al., 2013).

Layout

Bitner (1992) defines spatial layout as "the ways in which machinery, equipment, and furnishings are arranged, the size and shape of those items, and the spatial relationships among them.", and functionality as "the ability of the same items to facilitate performance and the accomplishment of goals.". Efficiency of the layout and the functionality in the store are important, because it makes

it easier for customer to shop (Bitner, 1992). The satisfaction and perception of customers are related to the easiness to move around, spaciousness and easiness to locate products and merchandise (Han & Ryu, 2009; Mohan et al., 2013). Besides the functionality, the layout can lead customers in certain directions which affects the purchase behaviour. Customers tend to purchase more unplanned purchases if customers are exposed to more aisles due to a layout that encourages customers to walk more aisles which exposes them to many products (Inman, Winer, & Ferraro, 2009). However, it must be noted that customers often stay in an aisle for a short period of time and do not walk the entire aisle up and down (Larson, Bradlow, & Fader, 2005). The location of a product is also part of the layout. Products placed in the end of the aisle get more attention than those at the centre of an aisle (Larson et al., 2005).

Signs

Signs that are displayed in the store have different purposes. It can be used as labels, directional purposes, a tool to communicate the rules of behaviour in the store (Bitner, 1992) and as promotion (banners, posters and price offers). In stores, the signs are used to help the customers locate their needed products by guiding them to different departments, aisles or service areas, and to show the availability of different brands, prices or product characteristics (Varley, 2014). Providing the relevant product information on signs will pull customers towards the product and increases the purchase intention (Huddleston, Behe, Minahan, & Fernandez, 2015). Signs can be used in combination with displays, for instance, a promotion with a certain display can increase the sales (Wilkinson, Mason, & Paksoy, 1982).

2.1.3 Social factors

Social factors include other people's presence in the store (Baker et al., 1994), such as other shoppers and employees. Social factors refer to social conditions represented by the characteristics and behaviour of customers and personnel interacting in the store, and to crowding (Baker et al., 1994; Lam, 2001; Turley & Milliman, 2000). These social factors have mostly an effect on the emotions of customers (Yoo, Park, & MacInnis, 1998).

There are several manners to measure the perception of customers in relation with social factors. In the study of Sherman et al. (1997) the focus was on the perception and emotional state of the customers with regard to the social factors. Customers were asked to evaluate the social factors in terms of Lively–Unlively, Cheerful–Depressing, Boring–Stimulating and Courteous salespeople–Discourteous salespeople. Mohan et al. (2013) studied the relation between, among others, social factors and shopping enjoyment and purchase behaviour. They conducted a survey in which participants had to rate statements about the employees in the store in terms of pleasantness, appropriateness and terribleness.

Crowding

The perception of crowding includes two dimensions: social and spatial. The social dimensions refer to perceptions which are based on the number of persons and social interactions, whereas the spatial dimension refers to perceptions based on the amount of merchandise and fixtures and their configuration. Customers in a store perceive crowding based on different aspects, such as the spaciousness, how crowded a store is, the number of other shoppers, waiting in aisles, the closed feeling of customers and their perceived restricted movement (Harrell, Hutt, & Anderson, 1980). Crowding is related to customer emotions and behaviour, and can affect the enjoyment and pleasure of customers in a store (Ballantine, Jack, & Parsons, 2010). The decision to enter a store

environment is also affected by crowding (Hwang, Yoon, & Bendle, 2012). Furthermore, the expected level of crowding by customers in a store is related to their satisfaction (Machleit & Mantel, 2001). Crowding can be related to colour, for example the study of Yüksel (2009) showed that participants felt less crowded in a blue environment.

Personnel in store

The delivered service of personnel can be evaluated by a lot of different aspects. Baker et al. (1994) used the dimensions: treatment by personnel, likelihood of receiving personal attention by personnel, willingness to help by the personnel and the amount of time it takes for the personnel to assist. Parasuraman, Zeithaml, & Berry (1985) used the terms reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding/knowing the customers and tangibles to measure this element. Furthermore, Mohan et al. (2013) measured personnel in terms of knowledgeability, friendliness and helpfulness. Personnel can be related to the perceived service quality and the customer's feelings of arousal. For instance, stores with more personnel on the floor who are friendly have a higher service quality interference (Baker et al., 1994) and induce feelings of arousal in comparison with stores with less personnel who are less friendly (Baker, Levy, & Grewal, 1992).

2.2 Customers' satisfaction

The concept of customers' satisfaction

Spreng, MacKenzie, & Olshavsky (1996) define the overall satisfaction as "an affective state that is the emotional reaction to a product or service experience". They point out that overall satisfaction is based on the overall experience and not on individual items. Therefore, they included the satisfaction of individual attributes in their model. Bloemer & Odekerken-Schroder (2002) relate satisfaction to a state of fulfilment and explain customers' satisfaction in terms of expectations and actual performance of a store experience of customers. Customers have expectations before they go into a store and experience the store's actual performance during their shopping activity. Satisfaction occurs when the performance of the store exceeds the expectations. The extent to which a store fulfils the desires of a customer's is important in the creation of the feelings of satisfaction (Spreng et al., 1996).

Measurement of customers' satisfaction

Han & Ryu (2009) and Yoo et al. (1998) did a study in which they both examined the relation between some store environment elements and satisfaction. Yoo et al. (1998) measured customer satisfaction by asking the participants to fill out a questionnaire with a 7-point Likert scale (good–bad, like–dislike, favourable–unfavourable), whereas Han & Ryu (2009) used a 7-point Likert in which participants could evaluate the attractiveness of decoration, the quality of the store environment, pleasantness and the overall satisfaction.

In a lot of prior studies the scale of Fisher (1974) is used to measure the satisfaction of the store environment (Chebat & Michon, 2003; Mattila & Wirtz, 2001). This scale consists of several items (colourful-drab, negative-positive, stimulating-boring, attractive-unattractive, tense-relaxed, comfortable-uncomfortable, depressing-cheerful, good-bad, unlively-lively, bright-dull, unmotivating-motivating and pleasant-unpleasant), which customers can evaluate by filling out a questionnaire.

2.3 Customers' purchase behaviour

The concept of purchase behaviour

Kotler (1973) described how purchase behaviour is established. It starts with the store environment elements which evoke a perception by the customer. Then the perception of the store affects the information and affective state of the customer, which in the end influences the purchase behaviour. This emotional state is an intermediate step between the perception of the elements and the customer behaviour. The study of Sherman et al. (1997) also showed that this emotional state may influence the shopping behaviour if the customer has decided to shop. Purchase behaviour consists of several aspects, such as amount of time spent, amount of money spent, number of purchases (Sherman & Smith, 1987) and re-purchase intentions (Tai & Fung, 1997).

Measurement of purchase behaviour

Sherman et al. (1997) examined how store environment influences purchase behaviour. To measure the purchase behaviour of customers, participants were asked for an indication of their number of items purchased, amount of money spent, and amount of time spent. Furthermore, Donovan et al. (1994) followed a more extended procedure. They asked the participants first to estimate the expected time and money spent in the store. Then, the time when participants began to shop and the time when they checked out at the counter were noted. Lastly, the participants were asked how much money they spent and asked to rate the influence of several predetermined factors (i.e. store environment elements) on their shopping behaviour.

Different than the studies already discussed, Tai & Fung (1997) asked their participants to fill in a questionnaire, in which a 5-point Likert scale was used, to evaluate statements about their purchase behaviour. They examined the relation between emotional state and purchase behaviour. The statements were about the actual time spend in comparison with intended, actual money spent in comparison with intended and whether the participant would return to the store.

2.4 Demographics of customers

Zeithaml (1985) examined the relation between several consumer demographics (gender, age, income, marital status and working status) and several shopping variables (shopping time, amount of money spent). The study showed that certain demographic groups differ from traditional supermarket customers. The youngest and oldest group of shoppers spent less money per week in a supermarket than the age groups in the middle. Also, older customers spent more time in the supermarket than younger customers. Additionally, income is also related to time spent in a store. Customer with higher income spent more time (and more money) than customers with lower income. Therefore, it is important to consider certain customers' demographics. Furthermore, demographics of customers play an important role when ranking several store environment elements for choosing a supermarket (Carpenter & Moore, 2006) or when evaluating store environment elements. An example for this is culture, since people of different cultures can have different opinions about colours or smell (Kotler, 1973).

2.5 The supermarkets

Premium supermarkets and discounters differ in format and characteristics. Most premium supermarkets have more sales personnel on the floor who greet customers (Baker et al., 1994), and a broader and deeper assortment (Cleeren, Verboven, Dekimpe, & Gielens, 2010) than discounters. Discounters offer very few manufacturer brands and mostly their own private labels. The prices in these stores are very low compared to premium supermarkets. Furthermore, their store environment is very functional and minimalistic. Customers pick their groceries from cardboard boxes stacked on pallets (Cleeren et al., 2010).

Albert Heijn is one of the premium stores in the Netherlands. Besides their traditional supermarkets, they have Albert Heijn XL, Albert Heijn to go and an online web shop. It has 850 stores in which they provide 4 different private labels (Albert Heijn, n.d.). In 2016, they had the highest market share, being 35,2% (The Nielsen Company, 2017). Albert Heijn has a store environment with an active design, wide assortment of quality products and brands and has a premium image. The overall price of the store is higher than other supermarkets. Albert Heijn has a private brand and their advertising is focused on promotion of the store image and brands (Semeijn, van Riel, & Ambrosini, 2004).

Edeka is one of the premium supermarkets in Germany. In 2015, their revenue was 53.2 Million euros with a market share of 20.7% (Guillot, 2016). Edeka improved their competitive advantage by proving freshness and high-quality assortments, and improving their store environment. They want to enhance the shopper experience in the store by creating an impressive store environment. The focus is on a pleasurable shopping experience of consumers by investing a lot in the store environment. (Zentes et al., 2017).

Aldi is one of the discounters in both Germany and the Netherlands. Aldi promotes not only food but also non-food products, for example electronics, to attract new customers into the store and to have higher short-term profits. Whereas Edeka focusses on enhancing the shopping experience, Aldi focusses on task-oriented shoppers who prefer simpler store environment that not distracts them (Zentes et al., 2017). Simple environment includes only the essential furniture and the inexpensive looking floors and shelves. The products are presented in cardboard boxes and pallets. Also, there is no unnecessary decoration in the store. This modest design of the store communicates the format of Aldi to customers and their competitive advantage (Zentes et al., 2017). Aldi had a market share, in 2016, of 7% in the Netherlands and 10,6% in Germany (LZ Retailytics, 2017; The Nielsen Company, 2017).

3 Methodology

This chapter explains the methods that are used in this cross-sectional study and clarifies why these methods were chosen. Qualitative and quantitative research is used to examine the relation between the perception of the store environment elements and the customers' satisfaction and purchase behaviour. Combining both research methods enhances the quality of this study (Verhoeven, 2004). Figure 1 shows an overview of the used methods in this study. The main focus of the qualitative research is to discover how the store environment elements are used in the supermarkets and to explore how these elements influence the satisfaction and purchase behaviour of customers. This is based on the store managers' view. Additional, the focus of the quantitative research is to examine the relation between the environment elements and the customers' satisfaction based on the customers' view.

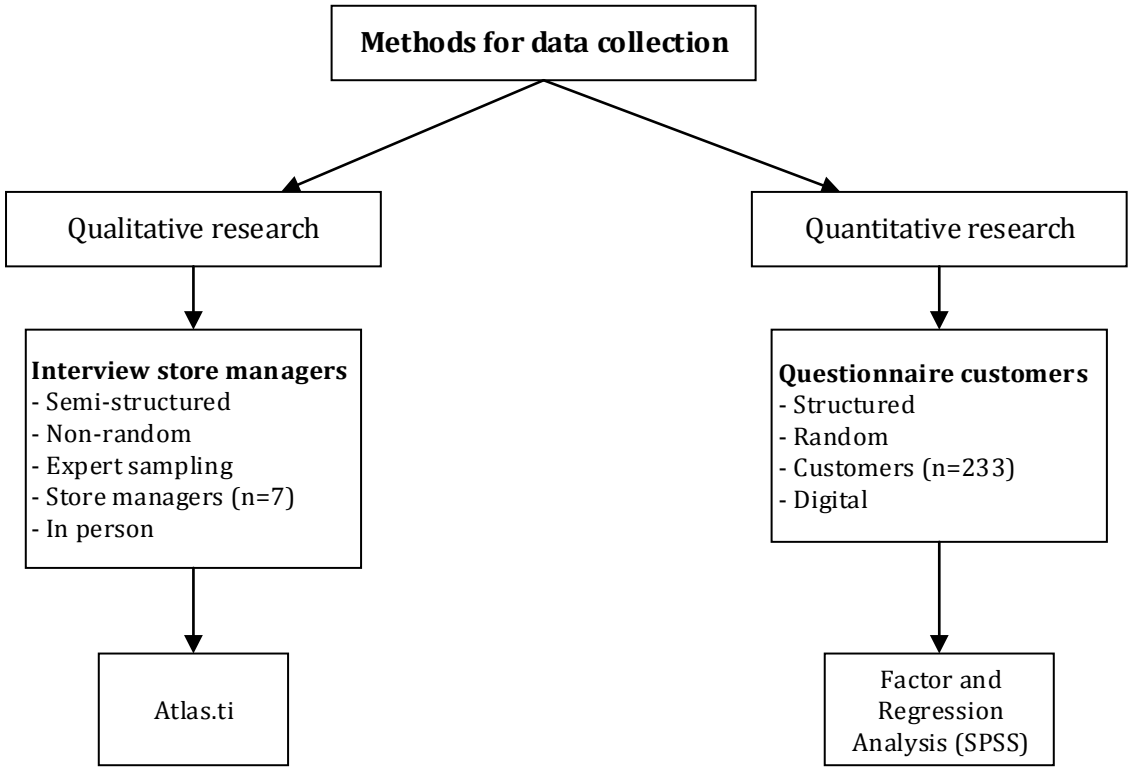

Figure 1: Overview of the methods used in this study

3.1 Sampling

Convenience sampling was used to select the supermarkets. The sample population is the store managers and customers of supermarkets in municipalities close to the borders of the Netherlands and Germany, because these are locations which are easy accessible for the researcher. The store managers are chosen as interviewees, because they are experts and have most knowledge about the store environment elements used in their store and have a view on how they influence satisfaction and purchase behaviour of customers. The respondents for the questionnaire are the customers of the store where the interview was conducted. No criteria were used to select the respondents, it was random sampling.

In both countries, one premium supermarket and one discounter was chosen. The list of contacted supermarkets can be found in appendix 7.1. Albert Heijn was chosen as the premium supermarket in The Netherlands, because the company has the highest market share in the Netherlands (The Nielsen Company, 2017). After contacting several Albert Heijn store managers by phone, it became clear that the store managers that were willing to cooperate were franchisers. For them, it is not necessary to receive permission from the head office of Albert Heijn, which is contrary to the non-franchisers.

As discounter in The Netherlands, Lidl was chosen because they have the highest market share (The Nielsen Company, 2017). The discounters did not have an individual phone number, only the phone number of their head office. So, the store managers of Lidl needed to be contacted in person. For Lidl it was also necessary to receive permission from the head office for participating in a study. Since receiving an answer from the head office of Lidl was expected to take considerable time, Aldi was chosen as discounter in the Netherlands. Because the stores of Aldi also did not have an individual phone number, the managers needed to be contacted in person. Two of the contacted store managers of Aldi were willing to participate in the study.

In Germany, Edeka was chosen because they have the highest market share (Guillot, 2016). The supermarkets of Edeka are part of the 'Edeka Verbund'. Depending of the 'rules' of the different 'Edeka Verbund', a store manager does not need permission to participate in a research.
Aldi, Lidl and Netto Markt (discounters in Germany) could not participate because they needed permission from the head office. The head offices of these three discounters were contacted, even though it was expected to take considerable time. An answer was not received in the available time of data collection. So, no store managers and customers of discounters in Germany do participate in this study.

3.2 Methods of Data Collection

The data was collected from primary sources: interview and questionnaires. At the supermarkets, first the store manager was interviewed, where after the survey was conducted. Table 1 gives an overview of the date and time of the interviews and survey, the number of store managers interviewed and the number of customers who participated in the survey. First, a pilot interview was conducted. Based on this pilot, the interview and questionnaires were improved for a better understanding of the questions and receiving more useful information.

Supermarket	Date	Time	Store manager (n)	Customers (n)
Aldi 2 (pilot)	28 September 2017	14.30h	1	29
Edeka 1	18 October 2017	10.00h	1	30
Albert Heijn Franchiser 1	19 October 2017	09.15h	1	36
Albert Heijn Franchiser 2	23 October 2017	11.00h	1	35
Aldi 1	24 October 2017	11.00h	1	38
Albert Heijn Franchiser 3	25 October 2017	13.30h	1	30
Edeka 2	26 October 2017	14.30h	1	35

Table 3.1 The sample

3.2.1 Interview

Conducting an interview has several advantages in this study compared to other instruments. The complex questions in the interview can be explained by the interviewer to the interviewee. Also, the interviewer can ask more in-depth questions when the answer is not clear or insufficient, which leads to more and valuable data.

The interview starts with the interviewer giving a short introduction about the content and purpose of the interview. Then, the store managers were asked whether they wanted to stay anonymous, to receive the transcript and/or thesis and if the interview could be recorded. This led to giving them a position of informed consent and maintain confidentiality. The interviews were recorded by phone and iPad.

We used a semi-structured interview with three open questions and one closed question. The order of the questions was fixed, but the process of asking was flexible, which meant that the interviewer had freedom in terms of used wording and how the questions can be explained. Also, in-depth questions could be formulated and asked during the interview to gather more information and understanding of the answers. In appendix 7.2 is the outline of the interview.

3.2.2 Questionnaire

Additional to the interview, a survey was conducted. A questionnaire was chosen as a research tool, because a lot of respondents can be reached in a relative small amount of time. In addition, the asked questions could be perceived as sensitive by respondents. To counter this, questionnaires offer great anonymity which lowers the barrier of participating. Prior studies also conducted a survey to measure customers satisfaction, which could imply that it is a valuable measurement method.

The survey was conducted at the exit of the supermarkets. All customers who walked from the check outs to the exit were asked to fill in the questionnaire, which consisted of sixteen closed questions and took approximately three minutes to complete. The questionnaire started with asking the respondents for their informed consent, after accepting, they could fill in the questionnaire. There was no interference of the researchers possible during this process.

The survey was conducted using the online survey tool Qualtrics. The participants could fill in online by iPad or on paper (the answers on paper were also inserted in Qualtrics by the researcher). A Dutch and German version of the questionnaire was available. The first question was about the supermarket in which they filled in the questionnaire, followed by four demographic questions (gender, age, income, education). Then, ten questions about the customer's experience of the store environment elements were asked, using a 7-point Likert scale from 1, 'very unpleasant' to 7, 'very pleasant'. Also, the option 8, 'Not applicable' could be chosen if the element was not available or experienced. The last question of the questionnaire was 'How satisfied are you with the supermarket?', which could be rated also with a 7-point Likert Scale, from 1, 'very unsatisfied' to 7, 'Very satisfied'. An example of this questionnaire can be found in appendix 7.3.

3.3 Data processing and analysis

3.3.1 Qualitative research

The recorded interviews are transcribed and coded with Atlas.ti. The transcripts of all interviews are located in a separate document. The texts of the transcripts are labelled per question and per element, for example 'Use-music', 'satisfaction-music' and 'purchase behaviour-music'. The last question regarding the direct relation between customer satisfaction and purchase behaviour is labelled as 'Relation SF-PB'. After all transcripts were coded, the data was put into tables. Assumptions about the effect of store environment elements on satisfaction and purchase behaviour by the managers are not included because it is not experienced by the store manager. The results are divided into three categories: use, effect on customer satisfaction and effect on purchase behaviour.

3.3.2 Quantitative research

The dataset, retrieved from the questionnaires, was exported to IBM SPSS. The used data were question two to sixteen of the questionnaire. The questions two to six covered the demographics of the participants. The questions six to fifteen were about music, lighting, scent, cleanliness, colour, displays, layout, signs, crowding and personnel respectively. Question sixteen was about the overall satisfaction of the supermarket.

In order to reduce many individual items to a lower number of dimensions, the factorability of the ten store environment elements was examined. The similar items in the data set are grouped into dimensions, which simplify the data. A principal component factor analysis (PCA) with a varimax rotation of the 7-Likert scale questions from the customer satisfaction questionnaire was conducted on data, gathered from 233 participants. The missing data was excluded pairwise and the cut-off value for components was 0.45. Before analysing the data, several assumptions were checked: multicollinearity, KMO and Bartlett's Test and the reliability with Cronbach's Alpha.

After the factor analysis, a multiple regression was used to estimate the relationship between the factor solution, and customer satisfaction. Before the analysis, the assumptions with regard to multicollinearity and normality were checked. In multiple regression, the differences between the supermarkets was not considered. To check for possible differences, a multi-level analysis and a regression analysis with dummies was conducted. The results and explanations of these analyses are discussed in the results.

After the data from qualitative research and quantitative research were analysed and interpreted, the findings of both, regarding the satisfaction of customer, were compared. The differences and similarities are pointed out. Following, the findings of the qualitative research regarding purchase behaviour are presented.

3.4 Conceptual Model

This research is guided by the model below (Figure 2). It is based on the study of Donovan & Rossiter (1982). They have tested the effects of the retail atmospherics and used the Stimulus-Organism-Response (S-O-R) model framework. However, in this research the "stimulus" are the store environment elements (lighting, music, scent, cleanliness, colour, display, layout, signs, crowding and personnel), whereas the "response" is the purchase behaviour. Between these concepts, the mediated emotional state, is the customers' satisfaction, which can be seen as the "organism".

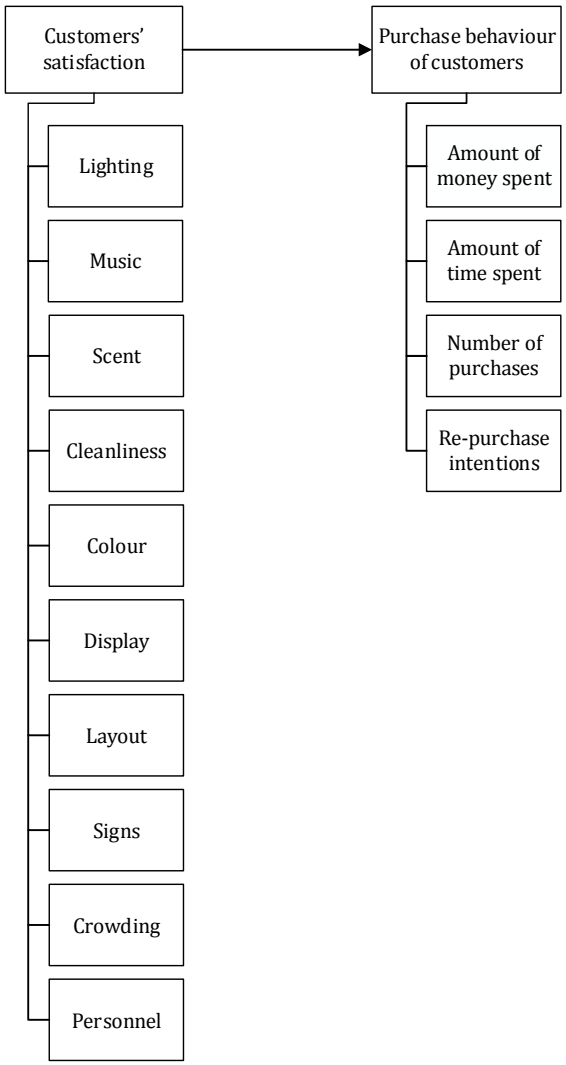

Figure 2: The relation between store environment elements and customers' satisfaction and purchase behaviour

4 Results

4.1 Qualitative results

The interviews are coded and put into the three tables below. Each table discusses one of the first three questions of the interview (use, customer satisfaction and purchase behaviour). The first table is divided into three columns: observed key word, commentary of the store manager and supermarket. The observed key words are the store environment elements. Per store environment element, the comments of the store managers are presented regarding the use of the elements. The other two tables are divided into four rows: observed key words, store environment element, store manager's commentary and supermarket. The observed key words are sub categories of the key concepts (customer satisfaction and purchase behaviour), which are based on the found literature. These observed key words for customer satisfaction are 'attractiveness', 'comfort' and 'pleasantness'. Literature pointed out that these are concepts, among others, that are used to measure customer satisfaction. Following, the observed key words for purchase behaviour are 'number of purchases', 'money spent', 'time spent' and 're-purchase intentions'. These words were used, among others, for measuring purchase behaviour in other studies. Per observed key word, the store environment element and comments the store managers shared are presented in the second and third row. In the last row the number of the supermarkets, of which the comment was, is shown. Because of their privacy, the supermarkets have all their own number, as can be seen in the table below.

Albert Heijn Franchise 1	= 1	Aldi 2	= 5
Albert Heijn Franchise 2	= 2	Edeka 1	= 6
Albert Heijn Franchise 3	= 3	Edeka 2	= 7
Aldi 1	= 4		

Table 4.1 Overview of supermarkets

4.1.1 The nature of reported use of store environment elements

Observed key words	*Store manager's commentary*	*Supermarket*
Lighting	- Led lighting was used	1, 4, 7
	- The spotlights are directed on the shelves, not the floor.	3, 7
	- Spotlights on different sections in the supermarket	2, 4, 5
Music	- Contemporary music is played.	1, 2, 3, 6, 7
	- The music is focused on the type of customers present in store (e.g. morning - housewives and evening - younger people).	7
Scent	- Scent is used (Fresh scent and scent coming from the Bake-off)	1, 2
Cleanliness	- Store needs to be clean.	1, 3, 5, 6, 7
	- Mirroring the products (products moved to the front of the shelf).	1, 4
	- Packages should be intact instead of broken or damaged.	1
	- Customers should reach the products easily without obstacles in their way.	1, 2, 5, 7
Colour	- Blue colour of Albert Heijn is used.	1, 3
	- Blue and white colour of Aldi is used.	4
	- Orange is used to show the special offers.	1, 2, 3
	- Red is used to show the special offers.	4, 6
	- Neutral colours are used in the store.	5
Displays	- The brands and product lines are placed in a horizontal and vertical order.	1
	- Use of special displays provided by the supplier.	1, 3, 4
	- Theme displays, which are based on the season and weather.	2, 3
	- Product presentations in wire baskets.	4, 5
	- Special displays used for fresh and weekly special offers.	5
	- The meat is presented in a fresh counter, where people can order and receive fresh packed meat.	6, 7

	-	Special offers in the 'special offer street'.	1
layout	-	The aisles in the supermarket are broad (that two charts could pass each other).	1, 4, 5, 7
	-	Displays are placed at the end of beginning of the aisles, where the customers walk by.	7
Signs	-	Signs are blue and in front of the aisles, it presents the food in the aisle.	1, 2, 3
Crowding	-	The number of customers is known by a software application, which determines the checkout capacity	1, 2, 3
	-	Besides regular checkout, also a self-checkout and a self-scan is used to overcome long waiting lines at the check outs.	1
	-	When a certain limit of customers in line for the check-out is reached, a new pay desk should open.	2, 4, 5, 6, 7
Personnel	-	Personnel must look decent, wear the entire uniform and proper clothing.	1, 2, 4
	-	As much as possible personnel in the store (to prevent waiting lines).	1, 7
	-	Personnel needs to help customers when they are searching for a product (and walk along to the product).	1, 2, 3, 4, 6, 7
	-	In case of a stock-out of a product, the personnel have to ask when the product is needed by the customer. In case of immediately need, the product will be brought to the customer's home.	7

Table 4.2 Results of the interviews regarding the use of the store environment elements

Table 4.2 shows that some of the store environment elements are used in a similar way between supermarkets. Now, led lighting is used by three supermarkets but two other managers (who do not have it yet) said that it also will be installed soon in their store, because it would be an improvement of the store (2,3). Further, the supermarkets which use music, play mostly contemporary music. Cleaning is very important and one of the priorities of the supermarkets, almost all supermarkets mention the need for a clean supermarket (1, 3, 4, 5, 6, 7), which also includes the removal of obstacles which makes it easier for customers to reach the products (1, 2, 5, 7). Blue colours are used by both Albert Heijn and Aldi in their store (which is part of their brand). The displays, that all the supermarkets use, are theme displays, displays for special offers or fresh food and displays provided by the supplier (1, 2, 3, 4, 5, 6, 7). Further, supermarkets have broad aisles, that two shopping charts could pass each other (1, 4, 5, 7). Lastly, two of the social factors are also used in a similar way in supermarkets. Most supermarkets have a maximum of customers that wait in line for the checkout. If the line exceeded the maximum, a new checkout is opened (2, 4, 5, 6, 7). Furthermore, personnel in all supermarkets are supposed to help customers when they are searching for a product, and if necessary walk along with the customer to the product (1, 2, 3, 4, 5, 6, 7),

4.1.2 The nature of reported effects on customers' satisfaction

Observed key words	*Store environment elements*	*Store manager's commentary*	*Supermarket*
Attractiveness	Lighting	- Spotlights on the fresh vegetables leads to a fresher appearance.	4
		- Led lighting shows the products more beautiful.	1
		- Using spotlights make products look more attractive.	4
	Colour	- In the vegetable section, the more colour, the more customers are attracted.	2
Comfort	Cleanliness	- Customers want to reach the products easily and not be interfered by a re-stocker of shelves.	1, 3
	Signs	- Signs make it easier for customers to shop and the orientation for customers is easier	1
	Layout	- Customers respond positive to a spacious supermarket with broad aisles and respond negative to tight aisles.	1, 3, 4
Pleasantness	Lighting	- Positive response on led lighting.	1
	Music	- The volume of music can influence the mood of customers.	1, 6
	Scents	- Unpleasant scents lead to dissatisfaction.	1

Cleanliness	-	Customers respond positive when the store is clean, it is a pleasure to them.	4, 7
Colour	-	Colour can be seen as ambiance. Customers are more satisfied with a nice ambiance, not simple and sterile.	3
Display	-	Full and well-presented shelves satisfy the customers.	1, 5
Crowding	-	Waiting time is one of the biggest irritations of customers.	3
	-	Customers prefer to shop in a quiet supermarket, instead of crowded.	4
Personnel	-	In case of personnel problems, such as shortage or planning problems, the customers can response negatively.	1
	-	How personnel help and care for the customers and their wishes has an influence on customer satisfaction.	7
	-	Personnel has also an advice function. When customers feel informed and has chosen a needed product based on advice, the customers feel happy.	7

Table 4.3 Results of the interviews regarding the customer satisfaction of the store environment elements

During the interviews, the supermarket managers (1,3,6,7) pointed out that cleanliness, availability of the products, spaciousness, waiting time at the check outs and personnel are most important for enhancing customer satisfaction. This is can also be seen in table 4.3.

Lighting is most common used for the attractiveness of the products. By using spotlights and led lighting, products appear to be more attractive and beautiful (1, 4). Following, cleanliness, signs and spaciousness (layout) enhances the comfort for customers. Spacious and clean aisles make the shopping for customers easier because they can research needed products more easily. In addition, signs make the orientation and search for the products easier for customers. Lastly, pleasantness of the shopping is related to almost all elements. Personnel is mostly named for pleasantness. Customers' shopping experience are pleasant when led lighting is used, the music has proper volume and the store has a nice scent. Also, a clean store with colour, filled shelves, small waiting lines, where the personnel helps, cares and advices customers is preferred by the customer.

Even though Aldi 1 (4) does not use music, led lighting and scent consciously, the store manager had some assumptions regarding their effect. He thought that music would influence purchase behaviour and customers would be happier. Also, led lighting is not used in his store, but he mentioned that the products would appear more beautiful if he did. Lastly, he thought that scents of freshly baked bread would attract customers, who would also buy the products. Another interesting comment, which is mentioned by the store manager of Edeka 2 (7), is that music is not specifically used for customers but is a factor of the satisfaction of employees. They start the day with a better feeling if music is present.

4.1.3 The nature of reported effect on purchase behaviour

Observed key words	*Store environment elements*	*Manager's commentary*	*Supermarket*
Number of purchases/money spent	Lighting	- Proper lighting enhances purchase behaviour because people can see them, which makes them want to buy it.	7
	Scent	- Scent is a factor in influencing purchase behaviour	1, 2
	Cleanliness	- Ugly or broken packages will not be bought.	1
		- When the shelves are tidy, customers can see the product better/ easier be found and will rather buy it.	3, 4
	Displays	- Displays indicate lower prices, perceived as price signal.	1

		-	Displays increases the products purchased by customers.	3
		-	Displays with special offers need to be full, because customers are then more prone to buy these products.	5
		-	Theme displays can be used to attract people to a certain aisle, hoping that they buy not only the products of the display but also the products around.	2
		-	Products on sale tables are at the same height as a chart, which are easy reachable and more bought.	1
		-	Products on eye-height are more often bought.	2
	Layout	-	Products in the middle of an aisle are most bought.	5
		-	The products/displays in aisle one are mostly bought.	1, 4, 5
	Crowding	-	If there is enough space to do groceries and customers can reach the products easily, more is bought.	1
	Personnel	-	The behaviour of personnel increases the amount of purchases/sales of customers by helping and giving tips to customers, answering request of customers, and make them feel comfortable.	1, 3, 4, 5
		-	Let customers taste products, leads to more sales.	2, 3
		-	Personnel give tips for alternative products, the location of the products and additional products which can be used. This influences the purchase behaviour.	4
		-	Personnel can help customers and make them feel more comfortable, which leads to more buying.	5
Time spent	Cleanliness	-	When a supermarket is clean and tidy, customers can do their groceries calmer, which lead to more time spending in the store.	2
Re-purchase intentions	Colour	-	Colour contributes to the discount image of the store, which is perceived as cheap by customers which influences the price feeling of the customer and eventually the re-purchase intention.	4
	Cleanliness	-	Customers will not return to the supermarket when it is a mess / Customers will return to the supermarket when it is clean and tidy.	3, 5, 7
	Crowding	-	When customers experience long waiting time, they might do their groceries somewhere else next time.	1
	Personnel	-	When personnel help customers and appear competent, customers will return to the store.	7

Table 4.4 Results of the interviews regarding the purchase behaviour of the store environment elements

Table 4.4 gives an overview of the influence of store environment elements on different aspects of purchase behaviour. The 'number of purchases' and 'money spent' are used together as an observed keyword, because these are used in a similar way by managers. Elements that have the highest effect on 'number of purchases' and 'money spent' are displays and personnel. In this case, displays do not only mean the presentation of the products but also the location of the products in the shelves. The height and position of the products influence the purchase behaviour (1, 2). Personnel also influences this behaviour in terms of helping and giving tips to customers, answering requests of customers, and make customers feel comfortable (1, 3, 4, 5). The advice and tips can be suggestions for alternative products (when the needed products are out of stock) and additional products (which can be used in combination with the needed product). This behaviour of the personnel increases the amount of purchases of the customer (4). Following, time spent, and re-purchase intentions are mostly related to cleanliness. Cleanliness is pointed out as very important for purchase behaviour by several managers during the interview (2, 3). Reasons are that customers can see the products in a better way and will rather buy it. A customer will also not return to the store and do their groceries somewhere else when a store is a mess.

4.1.4 Results relation customers' satisfaction and purchase behaviour

The last part of the interview was about the direct relation between customer satisfaction and purchase behaviour. All store managers confirmed and commented on this relation. In terms of amount of purchases, managers commented: "I am convinced that when you are in a good mood, you will take some cookies or something extra" (3) and "When a customer is satisfied, he will buy more" (4). The store manager of Aldi 2 also noticed that when customers are satisfied, they are prone to buy more products in his store instead of other supermarkets. Further, store managers (3, 7) commented on the returnability of customer, that when a customer is satisfied, the customer will return to the store. The importance of a customer leaving the store satisfied, which increases the likelihood of returning to the store is pointed out by the store managers (4, 5). Returning of the customers is the most important for the managers (1, 5).

Furthermore, the store manager of Edeka 1 mentions how he measures this relation: because of the extensive competition in this industry, in which a lot of supermarkets open and closes, the revenue of his supermarket stays the same or even rises. This shows that his customers keep coming to the store and buy the same amount or even more.

4.2 Quantitative results

Besides a qualitative analysis, a quantitative analysis is conducted to confirm the results of the qualitative data regarding customer satisfaction. This analysis is based on the questionnaire that was conducted in the supermarkets. First, the descriptives of the variables are shown, followed by the results of the factor analysis and subsequently the results of the regression analysis.

4.2.1 Exploring the data

Items	*N*	*Minimum*	*Maximum*	*Mean*	*Standard Deviation*
Gender	233	1	2	1.74	.44
Age	233	1	9	5.26	1.81
Income	233	1	11	3.83	2.22
Education	233	1	7	4.61	1.80
Music	154	1	7	5.18	1.15
Lighting	227	2	7	5.32	1.13
Scent	208	1	7	5.10	1.12
Cleanliness	231	1	7	5.48	1.18
Colour	227	2	7	5.24	1.13
Display	223	2	7	5.18	1.18
Layout	229	2	7	5.39	1.15
Signs	199	1	7	5.22	1.21
Crowding	231	2	7	5.41	1.20
Personnel	227	2	7	6.07	.78
Customer satisfaction	232	1	7	5.99	.96

Table 4.5 Descriptive statistics

The descriptive statistics of the variables are shown in table 4.5 (output in appendix 7.4.1). The answers regarding the experience of the elements vary from "Neither pleasant, nor unpleasant" to "pleasant", with the average rating of the shop elements varying between 5 and 6, and standard deviations of around 1. For Customer satisfaction the mean is almost "Satisfied". The standard deviation for most elements is relatively small, which means that the measures of the store environment elements have a small spread. The min and max are mostly similar for all elements. The lowest value is "Very unpleasant" or "Little unpleasant" and the highest value is "Very pleasant". Customer satisfaction has as lowest value of "Very unsatisfied" and the highest value is "Very satisfied".

This model also includes the demographic variables. The sample consisted of mostly women. The average age was between 45 and 64 years, whereas the average total income per year varies between 20.000 and 39.999 euro's. Income has a relatively high standard deviation, which implies a large spread. The highest education level of the sample has an average that varies between 4 (pre-university education) and 5 (Secondary vocational education).

	Gen.	*Age*	*Inc.*	*Edu.*	*Mus.*	*Lig.*	*Sce.*	*Cle.*	*Col.*	*Dis.*	*Lay.*	*Sig.*	*Cro.*	*Per.*
Gender														
Age	-.100													
Income	-.085	.115												
Educat.	.016	-.139*	.414**											
Music	.040	-.110	-.192*	-.191*										
Light.	.044	-.013	-.264**	-.200**	.380**									
Scent	.044	.037	-.327**	-.220**	.361**	.621**								
Clean.	.117	.077	-.082	-.053	.142	.375**	.432**							
Colour	.070	-.009	-.121	-.108	.209**	.481**	.426**	.539**						
Display	.071	.013	-.190**	-.126	.341**	.465**	.476**	.534**	.545**					
Layout	.127	.003	-.165*	-.029	.259**	.346**	.300**	.453**	.468**	.566**				
Signs	.115	.135	-.168*	-.160*	.274**	.445**	.411**	.453**	.514**	.551**	.569**			
Crowd.	-.013	.061	-.105	-.002	.066	.227**	.233**	.393**	.337**	.352**	.362**	.402**		
Person.	.122	-.012	-.040	-.038	.236**	.222**	.134	.292**	.260**	.267**	.269**	.330**	.309**	
Satisfac.	.089	.038	-.123	-.053	.301**	.418**	.374**	.567**	.454**	.534**	.435**	.477**	.446**	.422**

* p<0.05

** p<0.01

Table 4.6 Table of correlations between the variables

To test whether the data retrieved from the survey show multicollinearity and give a valid result, a correlation analyses was conducted. Table 4.6 shows the spearman correlations of all the variables in the model (output in appendix 7.4.2). The correlation matrix showed that all variables regarding store environment elements have a weak (r<0.39) to moderate (r<0.59), positive relation. Signs and layout have the highest correlation, followed by displays and layout.
Furthermore, the matrix shows that all the variables have a weak, negative relation with "total income per year" and "highest level of education".
Although the relation between most elements is significant, they are weak which means that multicollinearity would not interfere with the interpretation of the outcome of this analysis.

Besides testing the variability and linearly relations, the reliability is tested. Because a Likert Scale is used in the survey, the reliability analysis is conducted to determine whether the scale is reliable and if the questions reflect different underlying dimensions. The reliability analysis showed that the Cronbach's alpha is 0.622 (appendix 7.4.3), which indicates a high level of internal consistency of the scale. This means that the questionnaire is reliable. Further, the Item-Total Statistics (appendix 7.4.4) shows that the Cronbach's alpha increases when the demographics would be deleted. However, the increases are small so all variables are retained.

4.2.2 Factor analysis

The Kaiser-Meyer-Olkin measure verifies the sampling adequacy for the analysis, KMO = .878, which means that a factor analysis is appropriate for this data. In addition, the Bartlett's Test is significant (sig = .000), which indicates that there are some relationships between the variables, so a factor analysis is appropriate. This can be found in appendix 7.5.1.

	Component	
	1	2
Music	-.040	**.789**
Lighting	.400	**.716**
Scent	.322	**.735**
Cleanliness	**.754**	.209
Colour	**.716**	.309
Display	**.680**	.388
Layout	**.710**	.163
Signs	**.716**	.269
Crowding	**.667**	-.039
Personnel	**.491**	.113
Eigenvalues	4,434	1,158
Percentage of total variance	44,34	11,58
Cumulative percentage		55,93

Table 4.7 Component structure of the store environment elements (N=233)

Factor analysis yielded a two-factor solution. The two factors are retained because of the converge of the scree plot and Kaiser's criterion on this value (appendix 7.5.1-2). Also, as can be seen in table 4.7 (based on the output in appendix 7.5.3-5), the eigenvalues are greater than one, which also shows that both are considered as factors. Factor 1 explains 44,34% of the total variance, whereas factor 2 only explains 11,58% of the total variance. The two-factor solution explains in total 55,93% of the variance of the original data. Seven items loaded onto factor 1, namely Cleanliness, Colour, Display, Layout, Signs, Crowding and Personnel. These seven items relate to the design and social elements (based on the categorizing of Baker et al. (1994)), which are the tangible elements of the store. This factor was therefore labelled 'Tangible elements'. Furthermore, the three items that loaded onto factor 2 (Music, Lighting and Scent) relate to ambient elements, which can also be named intangibles elements. Factor 2 was labelled 'Intangible elements'. The scales for both factors, tangible and intangible elements, had high reliabilities, with the coefficient Cronbach's α of .85 and .69 respectively (appendix 7.5.5).

4.2.3 Multiple regression analysis

Predictor variables	Adjusted R^2	Δ Adjusted R^2	B (unstandardized)	p
Constant (customer satisfaction)			5.651	
Gender[a]	-.004		.132	.494
Age[b]	-.008	-.004	.042	.379
Education[c]	-.013	-.005	.006	.909
Income[d]	.005	.018	-.075	.075±
The store environment elements	.354	.349		
Tangible elements			.576	.000***
Intangible elements			.317	.000***

± p<.10.
*** p<.001.

Table 4.8 Results of multiple linear regression analysis for variables predicting customers' satisfaction (N=233)

The results of the linear regression are presented in table 4.8. The total income per year of the customers in this study is negatively related to the customer satisfaction (B=-0.075), explaining 1,8% of its variance. In other words, the higher the income of customers, the less pleasant customer satisfaction is evaluated. The other demographics had no significant relationship with customer satisfaction. Additionally, the tangible and intangible elements are significantly related to the customer satisfaction, explaining 34,9% of its variance. The tangible elements have an almost two times higher effect (B=0.576) on customer satisfaction than the intangible elements (B=0.317). The output of the regression can be found in appendix 7.6.1-2.

4.2.4 Other analysis considerations

Besides a multiple regression analysis, other methods of analysis were considered: Mixed Model Analysis and analysis with the use of dummy variables. A multiple regression assumes that all of the measurements for a given supermarket customers group have uncorrelated errors. In other words, the differences between the supermarkets are not considered. To check for these uncorrelated errors, a Multi-Level Analysis (Mixed Model Analysis) was executed. The data set is based on the seven supermarkets. The fixed variables are the store environment elements. The random intercept is used with a Covtype specification. However, the output of the analysis (appendix 7.7.1) was not convincing for the consideration of the hierarchy in the data. The intercept variance was not significant (p=.256), which indicates that the differences between the supermarkets are not relevant to consider.

Furthermore, a regression analysis with dummy variables was executed. All supermarkets have a dummy, except for one: Albert Heijn 2. The dummy variables are used to show the differences between the supermarkets regarding the store environment elements in relation with customer satisfaction. The dummy variables are defined as 1 for the specific supermarket and 0 for the other supermarkets. For example, for Albert Heijn 1: 1=Albert Heijn 1, 0=Other supermarkets. After recoding the supermarkets into dummy variables, a multiple regression was executed. In this multiple regression analysis the dependent variable is customer satisfaction and the independent variables are the store environment elements, and one of the dummies was included each time. In total six regression analysis were made.

Supermarkets	B	p
Albert Heijn 1	-.025	.893
Albert Heijn 3	.086	.670
Aldi 1	.109	.557
Aldi 2	.022	.916
Edeka 1	-.031	.878
Edeka 2	.184	.338

Table 4.9 Results of the regression analysis including dummies

The results in table 4.9 show that the supermarkets are not significant predictors of customer satisfaction. Their unique characteristics are not relevant to consider. It could indicate that it is not relevant which format a supermarket chain uses, since they are evaluated by the customer equally. Therefore, the regression analysis with the dummy variables is not used in this study. Another reason for excluding this analysis in this study is that the results cannot be generalised because the findings are specific for these seven supermarkets.

5 Discussion and conclusions

Based on customers' evaluations of both German and Dutch premium and discount supermarkets, the store environment consists of tangible and intangible elements. Both elements appear to be significantly positively impacting customer satisfaction, explaining 34.9% of its variance. The effect of tangible elements on customer satisfaction (B=.576) is almost twice as strong as that of the intangible elements (B=.317). This implies that the evaluation of de tangible elements has greater impact on the customer satisfaction than the evaluation of the intangibles. Controlling for the consumer demographics gender, age, income and educational level showed that only customers' income affects their satisfaction with the supermarket, impacting this negatively (B=-.075), and explaining 1.8% of its variance. This indicates that higher income customers are more critical in the evaluation of the store environment than lower income customers. Also, the higher the income, the higher the expectations of customers may be.

No significant differences were found in the store evaluations between countries (i.e. Germany and the Netherlands) and supermarket formula, being premium or discount. Although differences in customers' evaluation of different store elements may be assumed, the overall impact of the perception of the store on customer satisfaction is the same across countries and supermarkets.

According to the supermarket managers, all elements enhance the customers' satisfaction and purchase behaviour. However, some elements have greater influence than others. According to the managers of the supermarkets, lighting, cleanliness, crowding and personnel are most important for customer satisfaction. Furthermore, the supermarket managers pointed out that cleanliness, displays and personnel are the main influencers of the purchase behaviour of customers. Following, customers' satisfaction is also related to purchase behaviour. All managers confirmed this relationship. Satisfied customers spend more money while shopping, and are more willing to return to the store.

5.1 Theoretical relevance

From a theoretical perspective, this study has contributed to the literature regarding predicting customer satisfaction by using design features of store environment elements. This research examined the influence on customers' satisfaction and purchase behaviour by several combined elements. It confirmed the findings of prior studies that suggest that the store environment influences customers' satisfaction and purchase behaviour. However, a lot of other studies examined the elements differently compared to this study, for example by examining the store environment elements individually or just one category. The study of Baker et al. (1994) is similar, but the findings differ from the findings of this study. Baker et al. (1994) found that the perception on certain store elements by customers is mostly influenced by ambient and social factors, which differs from the findings in this study. This research also contributes to the literature since it is conducted in supermarkets, whereas most studies are conducted in restaurants, hospitals, specialty stores or retailers in general. More knowledge is now available about the store environment in supermarkets, regarding the use of tangible and intangible elements and influence on customer satisfaction and purchase behaviour.

5.2 Practical relevance

The findings of this research show store managers of supermarkets the possibilities of the use of the store environment elements and consequently how they affect satisfaction and purchase

behaviour of the customers. By adapting the store environment elements in a certain way, store managers can enhance the customer satisfaction and purchase behaviour, which results in a better performance. Results of this study show that both tangible and intangible elements influence the customer satisfaction. However, it is important for store managers to focus on all the store environment elements. The individual store environment elements all contribute to the satisfaction even though the level of impact can vary. This is similar for purchase behaviour. Additionally, it is important to acknowledge that also the environment is perceived by customers holistically. Not the individual elements or factors, but the store environment as a whole influences customers' response and behaviour. This is also mentioned by the store manager of Edeka 1, as in prior studies (Bitner, 1992; Mattila & Wirtz, 2001).

5.3 Limitations and implications for further research

Several limitations occurred during the study, which affect the validity and reliability. Due to time constraints, only seven supermarkets could be included in the study. Future research could include more supermarkets, both premium and discounters. Three supermarkets of the same chain provided enough data, because of similarities in use of the store environment elements (a lot is determined or provided by the head office). Therefore, it would be interesting to study another premium supermarket chain to see more differences in the use of the elements and the influence on the customer. Not only could it show more differences, but it could confirm statements of other store managers. This could show stronger results in the qualitative data. The same holds for the discounters. Comparing a higher amount of supermarket chains in future research would make the data more valid and valuable.

Another limitation that affects the validity is the fact that a lot of customers are used to the supermarket in which they do their groceries. While conducting the questionnaires, a lot of respondents mentioned that they were used to the supermarket and store environment elements. The fact that they do their shopping in the supermarket could mean they are satisfied with the supermarket. Additionally, one store manager mentioned that customers are used to the layout and have a routine. This familiarity with the store could be of influence on their response, since it influences the objectivity of the answers.

Only one question about each element is asked in the questionnaire, because of the length that participants are willing to answer. More questions about one element could lead to more convincing results. The questions could be divided based on the different attributes or aspects of the elements, which are discussed in the literature. In addition, the store environment elements are evaluated in terms of pleasantness, which indicates a certain feeling. This could lower the objectivity of the participants. In further research, the questions could be asked in a neutral way, for example a question in which they just rank the elements with numbers.

Further, because the interviews were at one moment in time, it could be difficult to collect the same information in the interview, which influences the reliability of this study. The mood of the respondent can differ which could influence the extensiveness of the answers, the willingness to answer and the time spending on the interview etc. Also, the setting and location of the supermarket could change. Some of the store managers mentioned that they are planning on moving or renovating the store, which could provide different data in the future. This is similar for the respondents of the survey. Even when a survey would be conducted at the same time as

this study, other respondents will participate, which can lead to different outcomes. Also, the mood and physical setting of the respondents could differ.

In the available literature, more store environment elements were discussed. However, some were not included in this study. Temperature and noise (part of the ambient factors) were not included because available literature was lacking. Aisle, assortment, shelf, floor- and wallcovering (part of the design factors) were not included, because of the lack of available literature and due to similarities to other elements. Future research should be conducted to show the customers' perception regarding these elements in the relation with satisfaction and purchase behaviour.

Although supermarkets of two countries were included in the research, no differences between the countries are found. Only two premium supermarkets in Germany are included compared to the three premium supermarkets and two discounters in The Netherlands, which makes it difficult to make a valid comparison. Future research could try to include more supermarkets in Germany to make a comparison and find relevant differences in use of store environment elements. Also, to find out if there is a difference in effect on the customers' satisfaction and purchase behaviour between supermarkets in Germany and The Netherlands.

In this study, the relation between the store environment elements and customer satisfaction is examined with qualitative and quantitative research. This is different to the data of purchase behaviour, since it was only tested by qualitative data. The confirmability of this data could be enhanced if it was also tested with quantitative data. Future research could include this in a study to enhance the quality of the research and the results.

6 References

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7 Appendix

7.1 List of contacted supermarkets

Name of supermarket	*Location*	*Address*	*Type*	*Way of contact*	*Partici-pation*	*If no, reason.*
Albert Heijn	Apeldoorn	De Eglantier 234	Non-franchiser	Phone	No	Permission from Headoffice Albert Heijn was needed.
Albert Heijn	Arnhem	Van Lawick van Pabststraat 76	Non-franchiser	Phone	No	Permission from Headoffice Albert Heijn was needed.
Albert Heijn	Arnhem	Fortunastraat 17	Non-franchiser	Phone	No	Permission from Headoffice Albert Heijn was needed.
Albert Heijn	Hengelo	Christiaan Langefeldstraat 83	Non-franchiser	Phone	No	Permission from Headoffice Albert Heijn was needed.
Albert Heijn	Boxmeer	Steenstraat 136	franchiser	Phone	No	The store manager was new and did not have a lot of experience.
Albert Heijn	Didam	Leliestraat 47	Franchiser	Phone	No	No time available.
Albert Heijn	Druten	Scharenburg 21	Franchiser	Phone	No	No time available.
Albert Heijn	Westervoort	Dorpsplein 6	Franchiser	Phone	No	Store manager could not be reached.
Albert Heijn	Groesbeek	Bellevue 3	Non-franchiser	Phone	No	Permission from Head office Albert Heijn was needed.
ALDI	Velp	Churchillplein 40	Non-franchiser	In person	No	Store manager was not present.
ALDI	Didam	Kerkstraat 36	Non-franchiser	In person	No	Permission from Head office Aldi was needed.
ALDI	Zevenaar	Muldershof 35	Non-franchiser	In person	No	Store manager was not present.
ALDI	Horst	Loevestraat 55-57	Non-franchiser	In person	No	It was not allowed to participate in researches.
ALDI	Venray	Veltumse Kleffen 50	Non-franchiser	In person	No	It was not allowed to participate in researches.
ALDI	Venray	Den Herk 96	Non-franchiser	In person	No	Store manager was not present.
ALDI	Straelen	Von-Galen-Strasse 1	Non-franchiser	In person	No	Permission from Head office ALDI was needed.
Edeka	Bocholt	Platanenweg 3	Franchiser	In person	No	No time available.
Edeka	Bocholt	Willi-Pattberg-Ring 2	Franchiser	In person	No	No time available.
Edeka	Willich	Bahnstraße 93	Franchiser	Phone	No	Store manager could not be reached.
Edeka	Dulken	Westgraben 5	Franchiser	Phone	No	No time available.
Lidl (NL)	Beuningen	Mauritsplein 43	Non-franchiser	In person	No	Permission from Head office Lidl was needed.
Lidl (DE)	Bocholt	Friesenstraße 23	Non-franchiser	In person	No	Permission from Head office Lidl was needed.
Lidl (DE)	Ahaus	Wessumer Strasse 67-69	Non-franchiser	In person	No	Permission from Head office Lidl was needed.
Lidl (DE)	Straelen	Niedieckstraße 58	Non-franchiser	In person	No	Permission from Head office Lidl was needed.
Lidl (DE)	Kaldenkirchen	Poststrasse 67-73	Non-franchiser	In person	No	Permission from Head office Lidl was needed.
Netto Markt	Kaldenkirchen	Venloer strasse 11	Non-franchiser	In person	No	Permission from Head office Lidl was needed.

7.2 Interview format store managers of the supermarkets

Interview Supermarkten Nederland

Voorafgaand aan het interview wil ik u vragen of wij dit gesprek mogen opnemen? Alles wat gezegd wordt tijdens dit interview is anoniem en vertrouwd. De data uit dit interview zal alleen gebruikt worden voor mijn Master thesis.

- Wilt u graag anoniem blijven of zouden wij de naam (Naam Supermarkt), of zelfs u eigen naam mogen gebruiken in het artikel?
- Wilt u het uitgeschreven interview bekijken voordat dit in het artikel gebruikt wordt?
- Wilt u het uiteindelijke bachelor thesis verslag en het uiteindelijke artikel toegestuurd krijgen?

Ik zou het vandaag graag met u willen hebben over hoe de store environment elementen in uw winkel gebruikt worden en hoe dit terug komt in de tevredenheid en het koopgedrag van uw klanten. De store environment elementen die besproken worden zullen zijn verdeeld in drie categorieën, namelijk eerst de ambiente factoren, hier valt muziek, geur, temperatuur, licht en geluid onder. Dan de design factors, hier valt vloer en muur decoratie, kleuren, netheid, gangpaden, assortiment, display, schappen, lay-out en borden onder. En tenslotte de sociale factoren, waar personeel bij hoort. Dit interview zal ongeveer een halfuur duren.

Vraag 1: Kunt u per element vertellen, op welke manier het element in uw winkel wordt gebruikt?

(Leg lijst met elementen voor de manager).

Vraag 2: Wat is het invloed van deze elementen op de tevredenheid van uw klanten?

(Vraag naar specifieke voorbeelden en data)

Of: Heeft u de invloed van deze elementen op de tevredenheid van uw klanten kunnen waarnemen?

Vraag 3: Wat is het invloed van deze elementen op het koopgedrag van uw klanten?

(Vraag naar specifieke voorbeelden en data)

Of: Heeft u de invloed van deze elementen op het koopgedrag van uw klanten kunnen waarnemen?

Vraag 4: Ziet u een direct relatie tussen de perceptie van de winkel omgevings-elementen en het koopgedrag van de klanten?

Bedank de manager van de winkel.

7.3 Questionnaire format customers in supermarket

Enquête

Introductie

Dit onderzoek gaat over de ervaring van klanten met betrekking tot de winkelomgeving in een supermarkt.
In deze enquête krijgt u een aantal vragen over verschillende elementen van de winkelomgeving en in hoeverre u deze elementen als aangenaam hebt ervaren (Als een element niet aanwezig zou zijn of u heeft het niet waargenomen, kunt u kiezen voor de optie: Niet van toepassing).

U wordt gevraagd om de vragen direct te beantwoorden, want er is geen mogelijkheid om terug te keren naar de voorafgaande vraag. In totaal zal u 15 vragen beantwoorden. De door u verstrekte gegevens worden anoniem opgeslagen en verwerkt. Deelname aan dit onderzoek duurt ongeveer 5 minuten.

Het onderzoek is uitsluitend bedoeld voor academische doeleinden en er zijn geen commerciële bedrijven bij betrokken. Het afronden van het onderzoek wordt beschouwd als toestemming voor deelname in dit onderzoek.

Alvast heel erg bedankt voor uw deelname aan dit onderzoek!

Bij welke supermarkt beantwoordt u de vragen?

- ○ Aldi
- ○ Albert Heijn
- ○ Edeka
- ○ Lidl

Wat is uw geslacht?

- ○ Man
- ○ Vrouw

Wat is uw leeftijd?

- ○ Jonger dan 18
- ○ 18 - 24
- ○ 25 - 34
- ○ 35 - 44
- ○ 45 - 54
- ○ 55 - 64
- ○ 65 - 74
- ○ 75 - 84
- ○ 85 of ouder

Wat is uw gemiddelde inkomen per jaar?

- ○ Minder dan € 10.000
- ○ € 10.000 - € 19.999
- ○ € 20.000 - € 29.999
- ○ € 30.000 - € 39.999
- ○ € 40.000 - € 49.999
- ○ € 50.000 - € 59.999
- ○ € 60.000 - € 69.999
- ○ € 70.000 - € 79.999
- ○ € 80.000 - € 89.999
- ○ € 90.000 - € 99.999
- ○ € 100.000 - € 149.999
- ○ Meer dan € 150.000

Wat is het hoogste schoolniveau dat u heeft voltooid?

- ○ Basisonderwijs
- ○ Lager / voorbereidend beroepsonderwijs (lbo / vmbo)
- ○ Hoger algemeen voortgezet onderwijs (havo)
- ○ Voorbereiden wetenschappelijk onderwijs (vwo)
- ○ Middelbaar beroepsonderwijs (mbo)
- ○ Hoger beroepsonderwijs (hbo)
- ○ Wetenschappelijk onderwijs (wo)

Heeft u de **muziek** in de supermarkt als aangenaam ervaren? Hierbij kunt u denken aan tempo, volume, genre en bekendheid.

Heel erg aangenaam	Aangenaam	Beetje aangenaam	Noch aangenaam, noch onaangenaam	Beetje onaangenaam	Onaangenaam	Heel erg onaangenaam	Niet van toepassing
○	○	○	○	○	○	○	○

Heeft u het **licht** in de supermarkt als aangenaam ervaren? Hierbij kunt u denken aan licht intensiteit, kleur en warmte.

Heel erg aangenaam	Aangenaam	Beetje aangenaam	Noch aangenaam, noch onaangenaam	Beetje onaangenaam	Onaangenaam	Heel erg onaangenaam	Niet van toepassing
○	○	○	○	○	○	○	○

Heeft u de **geur** in de supermarkt als aangenaam ervaren? Hierbij kunt u denken aan geurintensiteit en aroma.

Heel erg aangenaam	Aangenaam	Beetje aangenaam	Noch aangenaam, noch onaangenaam	Beetje onaangenaam	Onaangenaam	Heel erg onaangenaam	Niet van toepassing
○	○	○	○	○	○	○	○

Heeft u de **netheid** in de supermarkt als aangenaam ervaren? Hierbij kunt u denken aan hoe schoon en opgeruimd de winkel is, maar ook de verzorgdheid van het personeel.

Heel erg aangenaam	Aangenaam	Beetje aangenaam	Noch aangenaam, noch onaangenaam	Beetje onaangenaam	Onaangenaam	Heel erg onaangenaam	Niet van toepassing
○	○	○	○	○	○	○	○

Heeft u de **kleuren** in de supermarkt als aangenaam ervaren? Hierbij kunt u denken aan felheid, warmte en opdringerigheid.

Heel erg aangenaam	Aangenaam	Beetje aangenaam	Noch aangenaam, noch onaangenaam	Beetje onaangenaam	Onaangenaam	Heel erg onaangenaam	Niet van toepassing
○	○	○	○	○	○	○	○

Heeft u de **display** in de supermarkt als aangenaam ervaren? Hierbij kunt u denken aan hoe de producten zijn gepresenteerd (georganiseerd/willekeurig) en de positie in het schap of gangpad.

Heel erg aangenaam	Aangenaam	Beetje aangenaam	Noch aangenaam, noch onaangenaam	Beetje onaangenaam	Onaangenaam	Heel erg onaangenaam	Niet van toepassing
○	○	○	○	○	○	○	○

Heeft u de **indeling** in de supermarkt als aangenaam ervaren? Hierbij kunt u denken aan beschikbare bewegingsruimte en de gemakkelijkheid om producten te vinden.

Heel erg aangenaam	Aangenaam	Beetje aangenaam	Noch aangenaam, noch onaangenaam	Beetje onaangenaam	Onaangenaam	Heel erg onaangenaam	Niet van toepassing
○	○	○	○	○	○	○	○

Heeft u de **bewegwijzering** in de supermarkt als aangenaam ervaren? Hierbij kunt u denken aan beschikbaarheid van borden en relevante informatie, makkelijk/moeilijk weg vinden en of de bewegwijzering makkelijk te vinden is.

Heel erg aangenaam ○	Aangenaam ○	Beetje aangenaam ○	Noch aangenaam, noch onaangenaam ○	Beetje onaangenaam ○	Onaangenaam ○	Heel erg onaangenaam ○	Niet van toepassing ○

Heeft u het aantal klanten in de supermarkt, bewegingsruimte en wachttijden als aangenaam ervaren?

Heel erg aangenaam ○	Aangenaam ○	Beetje aangenaam ○	Noch aangenaam, noch onaangenaam ○	Beetje onaangenaam ○	Onaangenaam ○	Heel erg onaangenaam ○	Niet van toepassi ○

Heeft u het **personeel** in de supermarkt als aangenaam ervaren? Hierbij kunt u denken aan behulpzaamheid, bereidheid om aandacht te geven aan klanten en het gedrag van het personeel.

Heel erg aangenaam ○	Aangenaam ○	Beetje aangenaam ○	Noch aangenaam, noch onaangenaam ○	Beetje onaangenaam ○	Onaangenaam ○	Heel erg onaangenaam ○	Niet van toepassing ○

Hoe tevreden bent u met de supermarkt in het algemeen?

Zeer tevreden ○	Tevreden ○	Eerder tevreden ○	Noch tevreden, noch ontevreden ○	Eerder ontevreden ○	Ontevreden ○	Zeer ontevreden ○

Heel erg bedankt voor het meedoen aan dit onderzoek!

7.4 Output SPSS Exploring the data

7.4.1 Desciptives Statistics of the variables

Descriptive Statistics

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
What is your gender	233	1	2	1,74	,029	,438
What is your age?	233	1	9	5,26	,119	1,813
What is your total income per year?	233	1	11	3,83	,145	2,218
What is the highest level of education you have completed?	233	1	7	4,61	,118	1,802
How did you experience music in the supermarket?	154	1	7	5,18	,093	1,152
How did you experience lighting in the supermarket?	227	2	7	5,32	,075	1,127
How did you experience scent in the supermarket?	208	1	7	5,10	,078	1,118
How did you experience cleanliness in the supermarket?	231	1	7	5,48	,078	1,179
How did you experience colour in the supermarket?	227	2	7	5,24	,075	1,131
How did you experience display in the supermarket?	223	2	7	5,18	,079	1,179
How did you experience layout in the supermarket?	229	2	7	5,39	,076	1,148
How did you experience signs in the supermarket?	199	1	7	5,22	,086	1,210
How did you experience crowding in the supermarket?	231	2	7	5,41	,079	1,198
How did you experience personnel in the supermarket?	227	2	7	6,07	,052	,781
How satisfied are you with the supermarket?	232	1	7	5,99	,063	,956
Valid N (listwise)	131					

7.4.2 Spearman's rho correlation matrix

Correlations

			What is your gender	What is your age?	What is your total income per year?	What is the highest level of education you have completed?	How did you experience music in the supermarket?	How did you experience lighting in the supermarket?	How did you experience scent in the supermarket?	How did you experience cleanliness in the supermarket?	How did you experience colour in the supermarket?	How did you experience display in the supermarket?	How did you experience layout in the supermarket?	How did you experience signs in the supermarket?	How did you experience crowding in the supermarket?	How did you experience personnel in the supermarket?	How satisfied are you with the supermarket?
Spearman's rho	What is your gender	Correlation Coefficient	1,000	-,100	-,085	,016	,040	,044	,044	,117	,070	,071	,127	,115	-,013	,122	,089
		Sig. (2-tailed)	.	,128	,194	,811	,619	,511	,528	,075	,291	,290	,056	,105	,840	,067	,177
		N	233	233	233	233	154	227	208	231	227	223	229	199	231	227	232
	What is your age?	Correlation Coefficient	-,100	1,000	,115	-,139*	-,110	-,013	,037	,077	-,009	,013	,003	,135	,061	-,012	,038
		Sig. (2-tailed)	,128	.	,080	,033	,176	,842	,593	,242	,893	,848	,960	,057	,355	,863	,568
		N	233	233	233	233	154	227	208	231	227	223	229	199	231	227	232
	What is your total income per year?	Correlation Coefficient	-,085	,115	1,000	,414**	-,192*	-,264**	-,327**	-,082	-,121	-,190**	-,165*	-,168*	-,105	-,040	-,123
		Sig. (2-tailed)	,194	,080	.	,000	,017	,000	,000	,217	,068	,004	,012	,017	,112	,548	,062
		N	233	233	233	233	154	227	208	231	227	223	229	199	231	227	232
	What is the highest level of education you have completed?	Correlation Coefficient	,016	-,139*	,414**	1,000	-,191*	-,200**	-,220**	-,053	-,108	-,126	-,029	-,160*	-,002	-,038	-,053
		Sig. (2-tailed)	,811	,033	,000	.	,018	,003	,001	,421	,104	,060	,658	,024	,981	,569	,419
		N	233	233	233	233	154	227	208	231	227	223	229	199	231	227	232
	How did you experience music in the supermarket?	Correlation Coefficient	,040	-,110	-,192*	-,191*	1,000	,380**	,361**	,142	,209**	,341**	,259**	,274**	,066	,236**	,301**
		Sig. (2-tailed)	,619	,176	,017	,018	.	,000	,000	,079	,010	,000	,001	,001	,417	,003	,000
		N	154	154	154	154	154	153	144	153	151	149	152	143	153	152	154
	How did you experience lighting in the supermarket?	Correlation Coefficient	,044	-,013	-,264**	-,200**	,380**	1,000	,621**	,375**	,481**	,465**	,346**	,445**	,227**	,222**	,418**
		Sig. (2-tailed)	,511	,842	,000	,003	,000	.	,000	,000	,000	,000	,000	,000	,001	,001	,000
		N	227	227	227	227	153	227	207	226	223	218	224	194	226	222	227
	How did you experience scent in the supermarket?	Correlation Coefficient	,044	,037	-,327**	-,220**	,361**	,621**	1,000	,432**	,426**	,476**	,300**	,411**	,233**	,134	,374**
		Sig. (2-tailed)	,528	,593	,000	,001	,000	,000	.	,000	,000	,000	,000	,000	,001	,057	,000
		N	208	208	208	208	144	207	208	207	206	201	207	183	207	204	208
	How did you experience cleanliness in the supermarket?	Correlation Coefficient	,117	,077	-,082	-,053	,142	,375**	,432**	1,000	,539**	,534**	,453**	,453**	,393**	,292**	,567**
		Sig. (2-tailed)	,075	,242	,217	,421	,079	,000	,000	.	,000	,000	,000	,000	,000	,000	,000
		N	231	231	231	231	153	226	207	231	227	223	228	199	230	226	231
	How did you experience colour in the supermarket?	Correlation Coefficient	,070	-,009	-,121	-,108	,209**	,481**	,426**	,539**	1,000	,545**	,468**	,514**	,337**	,260**	,454**
		Sig. (2-tailed)	,291	,893	,068	,104	,010	,000	,000	,000	.	,000	,000	,000	,000	,000	,000
		N	227	227	227	227	151	223	206	227	227	219	225	196	226	223	227
	How did you experience display in the supermarket?	Correlation Coefficient	,071	,013	-,190**	-,126	,341**	,465**	,476**	,534**	,545**	1,000	,566**	,551**	,352**	,267**	,534**
		Sig. (2-tailed)	,290	,848	,004	,060	,000	,000	,000	,000	,000	.	,000	,000	,000	,000	,000
		N	223	223	223	223	149	218	201	223	219	223	222	194	222	218	223
	How did you experience layout in the supermarket?	Correlation Coefficient	,127	,003	-,165*	-,029	,259**	,346**	,300**	,453**	,468**	,566**	1,000	,569**	,362**	,269**	,435**
		Sig. (2-tailed)	,056	,960	,012	,658	,001	,000	,000	,000	,000	,000	.	,000	,000	,000	,000
		N	229	229	229	229	152	224	207	228	225	222	229	197	228	224	229
	How did you experience signs in the supermarket?	Correlation Coefficient	,115	,135	-,168*	-,160*	,274**	,445**	,411**	,453**	,514**	,551**	,569**	1,000	,402**	,330**	,477**
		Sig. (2-tailed)	,105	,057	,017	,024	,001	,000	,000	,000	,000	,000	,000	.	,000	,000	,000
		N	199	199	199	199	143	194	183	199	196	194	197	199	198	196	199
	How did you experience crowding in the supermarket?	Correlation Coefficient	-,013	,061	-,105	-,002	,066	,227**	,233**	,393**	,337**	,352**	,362**	,402**	1,000	,309**	,446**
		Sig. (2-tailed)	,840	,355	,112	,981	,417	,001	,001	,000	,000	,000	,000	,000	.	,000	,000
		N	231	231	231	231	153	226	207	230	226	222	228	198	231	226	231
	How did you experience personnel in the supermarket?	Correlation Coefficient	,122	-,012	-,040	-,038	,236**	,222**	,134	,292**	,260**	,267**	,269**	,330**	,309**	1,000	,422**
		Sig. (2-tailed)	,067	,863	,548	,569	,003	,001	,057	,000	,000	,000	,000	,000	,000	.	,000
		N	227	227	227	227	152	222	204	226	223	218	224	196	226	227	227
	How satisfied are you with the supermarket?	Correlation Coefficient	,089	,038	-,123	-,053	,301**	,418**	,374**	,567**	,454**	,534**	,435**	,477**	,446**	,422**	1,000
		Sig. (2-tailed)	,177	,568	,062	,419	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	.
		N	232	232	232	232	154	227	208	231	227	223	229	199	231	227	232

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

7.4.3 Reliability statistics: Cronbach's Alpha

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,622	,739	15

7.4.4 Reliability statistics: Item-Total Statistics

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
How did you experience music in the supermarket?	55,84	44,289	,342	,274	,848
How did you experience lighting in the supermarket?	55,51	41,790	,589	,461	,826
How did you experience scent in the supermarket?	55,78	42,758	,507	,434	,833
How did you experience cleanliness in the supermarket?	55,38	41,438	,607	,497	,825
How did you experience colour in the supermarket?	55,61	41,763	,637	,477	,823
How did you experience display in the supermarket?	55,76	40,136	,661	,469	,820
How did you experience layout in the supermarket?	55,55	42,280	,525	,336	,832
How did you experience signs in the supermarket?	55,67	41,053	,625	,422	,823
How did you experience crowding in the supermarket?	55,66	42,012	,472	,343	,838
How did you experience personnel in the supermarket?	54,90	47,952	,239	,150	,850
How satisfied are you with the supermarket?	54,95	44,051	,617	,434	,828

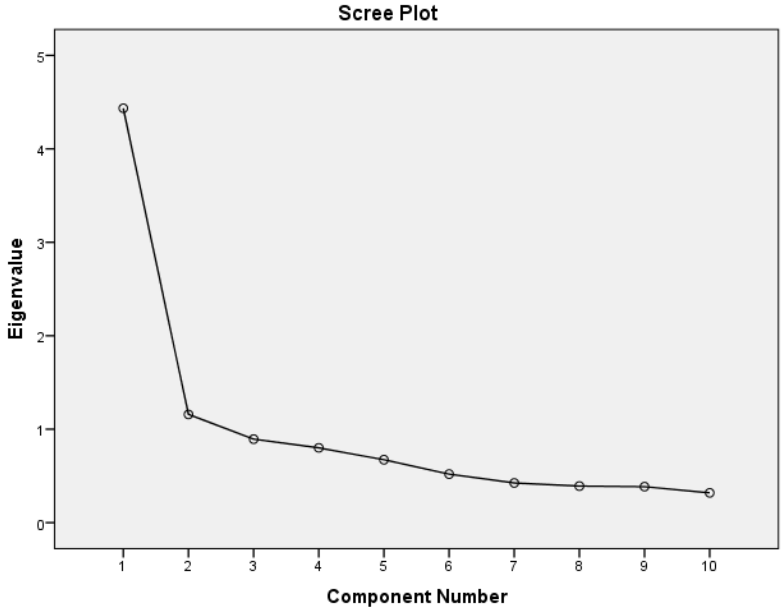
7.5 Output SPSS Factor Analysis

7.5.1 Factor analysis: KMO and Barlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,878
Bartlett's Test of Sphericity	Approx. Chi-Square	501,693
	df	45
	Sig.	,000

7.5.2 Factor analysis: Scree plot



7.5.3 Factor analysis: Rotated Component Matrix

Rotated Component Matrix[a]

	Component	
	1	2
How did you experience music in the supermarket?		,789
How did you experience lighting in the supermarket?		,716
How did you experience scent in the supermarket?		,735
How did you experience cleanliness in the supermarket?	,754	
How did you experience colour in the supermarket?	,716	
How did you experience display in the supermarket?	,680	
How did you experience layout in the supermarket?	,710	
How did you experience signs in the supermarket?	,716	
How did you experience crowding in the supermarket?	,667	
How did you experience personnel in the supermarket?	,491	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 3 iterations.

7.5.4 Factor analysis: Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,434	44,344	44,344	4,434	44,344	44,344	3,512	35,124	35,124
2	1,158	11,583	55,927	1,158	11,583	55,927	2,080	20,803	55,927
3	,894	8,938	64,865						
4	,801	8,006	72,870						
5	,673	6,732	79,602						
6	,519	5,193	84,796						
7	,425	4,249	89,045						
8	,391	3,914	92,959						
9	,385	3,848	96,807						
10	,319	3,193	100,000						

Extraction Method: Principal Component Analysis.

7.5.5 Reliability statistics of the factors: Cronbach's Alpha

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,846	,843	7

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,692	,697	3

7.6 Output SPSS Multiple Regression Analysis

7.6.1 Multiple regression: Model Summary

Model Summary[f]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,064[a]	,004	-,004	,957	,004	,535	1	129	,466
2	,085[b]	,007	-,008	,960	,003	,392	1	128	,532
3	,103[c]	,011	-,013	,962	,003	,435	1	127	,511
4	,188[d]	,035	,005	,953	,025	3,223	1	126	,075
5	,620[e]	,384	,354	,768	,349	35,110	2	124	,000

a. Predictors: (Constant), What is your gender

b. Predictors: (Constant), What is your gender, What is your age?

c. Predictors: (Constant), What is your gender, What is your age?, What is the highest level of education you have completed?

d. Predictors: (Constant), What is your gender, What is your age?, What is the highest level of education you have completed?, What is your total income per year?

e. Predictors: (Constant), What is your gender, What is your age?, What is the highest level of education you have completed?, What is your total income per year?, Design and Social factors (Component 1), Ambient factors (Component 2)

f. Dependent Variable: How satisfied are you with the supermarket?

7.6.2 Multiple regression: Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5,743	,344		16,685	,000		
	What is your gender	,140	,192	,064	,731	,466	1,000	1,000
2	(Constant)	5,572	,440		12,659	,000		
	What is your gender	,150	,193	,069	,780	,437	,993	1,007
	What is your age?	,029	,047	,055	,626	,532	,993	1,007
3	(Constant)	5,724	,498		11,496	,000		
	What is your gender	,153	,193	,070	,791	,431	,993	1,008
	What is your age?	,027	,047	,050	,568	,571	,986	1,014
	What is the highest level of education you have completed?	-,031	,047	-,058	-,660	,511	,992	1,008
4	(Constant)	5,798	,495		11,705	,000		
	What is your gender	,132	,192	,060	,686	,494	,989	1,011
	What is your age?	,042	,047	,079	,883	,379	,955	1,047
	What is the highest level of education you have completed?	,006	,051	,011	,114	,909	,831	1,203
	What is your total income per year?	-,075	,042	-,173	-1,795	,075	,820	1,219
5	(Constant)	5,651	,415		13,630	,000		
	What is your gender	,066	,155	,030	,425	,671	,979	1,022
	What is your age?	,020	,039	,037	,506	,614	,925	1,082
	What is the highest level of education you have completed?	,016	,042	,029	,374	,709	,801	1,248
	What is your total income per year?	-,020	,034	-,047	-,594	,554	,782	1,279
	Design and Social factors (Component 1)	,576	,076	,544	7,550	,000	,955	1,047
	Ambient factors (Component 2)	,317	,072	,330	4,374	,000	,875	1,143

a. Dependent Variable: How satisfied are you with the supermarket?

7.7 Other considerate analyses

7.7.1 Multi- Level Analysis: Output

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Residual		,324025	,042830	7,565	,000	,250073	,419846
Intercept [subject = Supermarket]	Variance	,036469	,032087	1,137	,256	,006502	,204568

a. Dependent Variable: How satisfied are you with the supermarket?.