Eindhoven University of Technology

MASTER

Atmospherics on the doorstep

the consumer preferences on store atmospherics

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Award date:
2015

Link to publication

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The Consumer Preferences on Store Atmospherics

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Master Thesis (7UU37)
Amsterdam, July 2015

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Eindhoven
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ATMOSPHERICS ON THE DOORSTEP

Preface

This thesis is the product of my graduation study of the Master of Science in 'Real Estate Management & Development' at the Eindhoven University of Technology. This master thesis was completed during an internship period at Syntrus Achmea Real Estate & Finance.

The aim of this study was to provide insight in consumer' preferences on atmospherics of stores in shopping malls. For this research surveys were held in three Dutch shopping malls under 270 consumers.

My interest in the subject was awaked after reading previous researches of former students concerning atmospherics of shopping malls in relation to experienced value of consumers. The Dutch Council of Shopping Centers (NRW) also erected a taskforce to provide more insight in consumer experience. Hopefully my research will add value to this subject.

I want to express my thanks to all the people who have helped me with the surveys, as well as the interviewers and the companies who provided access to their shopping malls.

In particular, my gratitude goes to the members of the graduation committee, Aloys Borgers, Pauline van den Berg and Roel Willems, who supervised me during my graduation.

Please enjoy reading this thesis,

A.D. (Toon) van Dorst

Amsterdam, July 2015

Abstract

The objective in this research is to get insight in the consumers' preferences on environmental characteristics. The main research question for this study is:

How do store characteristics influence consumer appreciation of a store in a shopping mall and what are the consumer preferences regarding atmospherics of a store in a shopping mall?

The literature review revealed seven store characteristic constructs: *Product assortment* (1), *Price-quality* (2), *Personnel & service* (3), *Store atmosphere* (4), *Location* (5), *Space aspects* (6) and *Image* (7). The characteristic concerning *Store atmosphere* can be disaggregated into different items called atmospheric constructs: *Music* (1), *Lighting* (2), *Temperature* (3), *Interior design* (4), *Shop window* (5), *Layout* (6) and *Crowding* (7).

To collect data for analyzing the influence of characteristics, consumer appreciation and consumer preferences, surveys were held among 270 consumers of nine <u>clothing stores</u> in three enclosed <u>shopping malls</u>. The participants compared two stores in each mall and stated their preference for all fourteen constructs. Ordinal regressions and multinomial logit (MNL) models were estimated in order to find answers on the research question.

By estimating ordinal regression models using scores on a 5-point Likert scales for all fourteen constructs five constructs influenced the appreciation of a store: *Product assortment, Image, Location, Shop window* and *Temperature* (in this order of importance). A second analysis was done without the seven disaggregated atmospheric constructs. Four constructs influenced the appreciation in this model: *Image, Product assortment, Store atmosphere* and *Personnel & service* (in this order of importance). Concluded from these analyses can be that the products of a store and the image of a store are the most important predictors of a stores' appreciation. This contrasts with the findings in the literature review, where *Store atmosphere* was repeatedly appointed being the most important predictor. However, the second model (without inclusion of the atmospheric constructs) shows that *Store atmosphere* is a predictor although it is not the most important one.

By estimating ordinal regression models and MNL models using measurable store characteristics, consumer preferences concerning *Space aspects* and the *Shop window*, are found to be somewhat related to these characteristics. Concerning the *Space aspects* of a store (ordinal regression), respondents preferred stores with one story instead of two stories. A smaller entrance size is preferred on a scale of 1.5 to 4 meters. Two other measurable characteristics (*Store width* and *Store size*) showed almost no effect in this model. Concerning *Shop window* (ordinal regression), respondents rated average signage on the façade positive and discreet signage less but still positive. An open view through the shop window was not preferred. The MNL model also showed that an open view through the shop window was not preferred. Further, the MNL model showed that a striking window dressing was preferred above a neutral window dressing. White, grey, green and blue dominant colors in the shop window are rated positive compared to a red color.

The number of significant relations between variables is limited. However, the results of both analyses were not contradicting and even had similar results concerning the view through a shop window. It should be taken into account that all of these results concern clothing stores in enclosed shopping centers. It might be that with other store categories or in other type of shopping areas results are different. Implications for further research are extending the sample size in order to have more good fitting models and increase the amount of locations with more diversion among store characteristics. Also try to incorporate alternative designs and multiple sources of data collection in order to avoid a possible single-source bias. Lastly, a consideration might be to focus on one characteristic construct instead of all constructs in order to gain more detailed results.

Table of Contents

1 Introduction

This chapter introduces this study, which is conducted to determine the atmospheric preferences of consumers towards a retail store in a shopping environment. First, in Paragraph 1.1 the context of this study will be discussed. In Paragraph 1.2 the main research question with its sub research questions will be described. At last, in Paragraph 1.3 an overview of the content of each chapter will be represented.

1.1 Context

Many people feel connected with shopping areas; because they are shopping center owners, civil servants, shop owners, politicians or consumers. The future of these areas concerns them all. Because of the constant change of shopping behavior, shopping areas also change. Shop vacancy is increasing and there are many bankruptcies among shop owners. But there are also positive changes such as successful new partnerships in shopping areas and attractive concepts on shop and mall level, offline as well as online or multi-channeling (Raatgever, 2014).

The retail market is changing rapidly, many trends occur in this sector. Consumers, for example, are more approached in an individual manner. Consumers have specific personal needs and a preference of treatment. The attraction to mass communication is decreasing among consumers. They desire a personal approach matching their specific needs. Another trend is the influence of the Internet. It makes consumers experts in acquiring all possible information before even entering a store. Especially social media has a big role where consumers discuss their experience with products (CBW-Mitex, 2010). Before entering a shop, consumers use search-websites and compare-websites to figure out what they really want or need and in some cases consumers do not even enter the shop at all and order on Internet to spare time or money (CBW-Mitex, 2010).

Stores that only focus on offline sales will face difficult times. However, shops that only focus on online sales will also face difficult times. Multi-channeling is the application of both offline and online strategies of approaching consumers. An even further step is Omni-channeling, whereby the combination of physical and virtual (the on – and offline channels) fits perfectly. Jan Willem Weissink, CEO of retail property company CORIO that owns several shopping centers, said in an interview that since the invention of the Smartphone consumers are constantly linked between the physical and virtual reality (Mensink, 2013). For example, you can order something on the phone when you are standing in a shop, like what happens at the Apple store. This phenomenon is called show rooming and shopping centers have to take precautions in order to prevent shops from forming operations such as "billboard". Possibly another business strategy is needed where consumers do not come to shopping centers for transactions but for interactions. "People need to experience something in our shopping centers, so you must constantly excite them" (Fokkema, 2013). The Rabobank calls it Retail 4.0, whereby they see the department store as 1.0, self-service as 2.0, the Internet as 3.0 and now the vertical and horizontal integration of retail. Vertical integration indicates that consumer demand has a more direct

control on the production process. Horizontal integration indicates that there are possibilities of partnerships between shop owners and shopping center owners and that mixed channels are used to reach the consumer. With this mixed use of channels costumer can be approached more personally and individually. But still few companies are able to do this effectively. Dutch precursors in this area are Coolblue and Albert Heijn for example.

All these changes have deep impact on the retail landscape, because for some types of stores it even means vanishing of the physical reality, especially stores that sell products that lend themselves easily for online purchases such as travel agencies, electronic stores, photo stores, music stores et cetera (Raatgever, 2014).

The retail sector suffered from the economic crisis. One of the most important trends is that the retail turnover thrives or suffers with the shrinkage or growth of our economy. Although the Netherlands still is one of the twenty wealthiest countries, the economy and with it the retail sector have difficult times (Raatgever, 2014). Since late 2012 the consumer spending has been descending for seven quartiles in a row and it is on the same level as late 2003. The prospects are not glorious because of a sober minded consumer, caused by decreasing spending power and a rising unemployment. Further, a staggering construction industry and housing market will also have its impact on the non-food industry (ABN AMRO, 2013).

The strategy of attracting consumers towards shopping areas is changing; this leads to a change in turnover that results in a change in lease prices. This is taking place on different scale levels and is driven by consumer preferences and the scale benefits of bigger players who have easier access to finance and have a better marketing reach. In the A1-locations the percentage of international retailers is increasing, especially within the real estate of institutional investors. Shopping areas have to become more compact for well functioning and space should be created for other functions such as hospitality services, healthcare or civil amenities (Raatgever, 2014).

With this movement, also different vacancy rates are seen among shopping areas in the Netherlands. According to Locatus (2014) South Limburg is the region with the highest retail vacancy rate, namely 11.9 percent. That is high compared to a vacancy rate of 3.9 percent in the region Great Amsterdam. Locally there are outliers of more than 20 percent and less than 3 percent (Raatgever, 2014). Nonetheless, the demand for space in retail areas is still increasing although the retail mix has changed. In the period between 2004 and 2013 retail space increased with 60 percent to 28 million square meters. The amount of retail has stagnated the last years, but there is a high increase of services and amenities such as fitness centers, hospitality services and to-go food & beverage stores. Inner-city shopping areas of big cities (A1-areas) still have a low vacancy rate due to the fact that most of the vacant stores are easily filled with stores moving from B or C-areas. Inner-city shopping areas of small towns or villages have fewer leasing possibilities just as the B and C-areas of bigger cities (Syntrus Achmea RE&F, 2013).

Nationwide vacancy is increasing and according to Versluis (2011) nobody acts upon the so-called 'tsunami of square retail meters'. According to Boersma e al. (2011) the retail real estate sector has to focus more on the consumer. According to Task Force Consumers experience (TFC) of the Dutch Council of Shopping Centers (NRW) it is necessary to focus on the demand side and to provide clear insight in the needs of consumers. Right now these consumer needs and the consumer experience usually have a small part in a retail real estate development. This has to change (Boersma et al., 2011). Consumer experience seems to be of high importance in attracting consumers. Breedveld et al. (2006) showed in their research a decreasing amount of leisure time of consumers. This in combination with more variety of possibilities to spend leisure time (Beunders & Boers, 2002), it is not miraculous that the number of passers-by in retail environment is decreasing. This shows the necessity to increase experiential value in order to attract consumers. Other researches have shown that the consumer's appreciation of shopping is decreasing, because of standardizing supply and possibilities of online shopping (Berendsen, 2009, and JLL, 2010). The development of online shopping hits the retail real estate sector hard, even as she tries to do her best in investing and maintaining an attractive shopping environment.

The retail real estate sector is still supply orientated. However, the demand of consumers is changing and the retail market has met the demand of square meters, so the sector needs to change her point of view and stop producing more square meters (Boersma et al., 2011).

Retail vacancy should not be solved by randomly filling spaces, but a retail area has to provide consumers in their needs and consumer experience is one of these needs. There is some research on how consumers feel about their experience in shopping areas, but little research has been done on the consumer experience of stores in a shopping mall. Some studies say that environmental characteristics in a retail area have effect on the consumer experience (Boersma et al., 2011). For different stakeholders these facts are interesting. When the consumer experience is more positive consumers will spend more in a shop. If this results in a higher turnover for the shop, the shopping area might get more popular and attractive, also for other stores located there. For shopping center owners this is an important development. This will cause higher revenues for investors of shopping centers.

1.2 Problem definition

In this study the objective is to get insight in the consumers' preferences on environmental characteristics (atmospherics) in a shopping mall.

Former studies have done research on atmospherics in shopping centers in relation to experiential value, differentiated by motivational orientation, age, gender or other socio-demographics (Dijkman, 2012; Willems, 2012; Op Heij, 2012; Elemans, Saes & Tiktak, 2013; and Van Dijck, 2014). With different models these authors showed the influence of atmospherics of shopping centers, which contributed to future processes of creating and maintaining shopping centers and attracting costumers to these centers.

This research will focus primarily on the atmospherics of a store as opposed to emphasizing atmospherics of the entire shopping center. Attracting consumers to a shopping center is one thing, attracting consumers towards a store is something else. In order to contribute in this process this thesis will provide insight in consumer preferences of atmospherics on store level.

The main research question in this thesis is:

How do store characteristics influence consumer appreciation of a store in a shopping mall and what are the consumer preferences regarding atmospherics of a store in a shopping mall?

The sub research questions derived from the main questions are:

1. How can store characteristics be defined?
2. How can atmospherics of stores be defined?
3. Which store characteristics contribute the most to consumer appreciation of a store?
4. What are the consumer preferences regarding the atmospherics of a store?

1.3 Overview of thesis

Figure 1-1 shows an overview of the content of this study. In total this study consists of seven chapters. The first chapter has introduced the subject and provided background or context. The next chapter contains the literature review in which atmospherics and consumer segmentations will be discussed. It provides the theoretical background and a framework for the entire study. The following chapter, Chapter 3, provides this research' methodology, containing the operationalization and methods of analysis. The next chapter (Chapter 4) will show the survey locations and describes each of the study areas. Chapter 5 discusses data collection and response. Chapter 6 presents the results of the analyses. The last chapter, Chapter 7, will handle the conclusions and provides recommendations to stakeholders and for further research.

Chapter 1	Introduction
Chapter 2	Literature review
Chapter 3	Research methodology
Chapter 4	Survey locations
Chapter 5	Data preparations
Chapter 6	Data analysis
Chapter 7	Discussion

Figure 1-1 Overview of content of this thesis

2 Literature review

In this literature review a clear picture of which atmospherics might be influencing consumer behavior will be drawn. Before exploring these atmospherics basic insight is needed in the motivations of consumers. Why do they go shopping? Furthermore, a model of the process of purchasing might be needed to find out at which point environmental cues or atmospherics might influence the consumers' thoughts. Also interesting is knowledge into consumer segmentation, because several studies suggest consumer preferences differ depending on the level of education, gender, age etc. This chapter will form the base of this research.

2.1 Shopping behavior

This section takes a look at the notion of shopping as a whole and with that why people shop. According to Tauber (1972) the area of shopping behavior is unfolded over three activities: shopping, buying and consuming. A theory that explains why people shop is because people need to purchase something (product orientation). But this theory is insufficient for the explanation of distinct buying behavior. Because motives for shopping are likely to consist of many variables, some might not be related to actual buying goods. A better explanation would be that a certain utility would be obtained from the merchandise that is acquired and a certain satisfaction that is provided by shopping activities (Tauber, 1972). In this paragraph different kind of shopping motivations will be discussed. Also insight will be given in the phases of a purchase process and which and how literature presents these models. In addition, impulse behavior will be analyzed in order to determine if impulse shopping is a part of such a purchase process.

Shopping motivations

Tauber (1972) makes two groups of hypothesized motives for shopping, namely one of *Personal motives* (P 1-6) and one of *Social motives* (S 1-5). Consumers shop because of *Role playing* (P1), which means a person internalizes their role in society and demonstrate the accompanied behavior (housewives buying groceries). *Diversion* (P2), people need diversion in their routine of daily life. *Self-gratification* (P3) is a motive when people want something that acts upon their emotion, for example buying ´something nice´ when one feels depressed. Consumers might also be *Interested* in (P4) or want *Physical activity* (P5) since shopping provides walking possibilities. The last personal motive is *Sensory stimulation* (P6). This motive derives from the potential sensory benefits merchandising can provide with trying it out. Music and scent also provides these sensory stimulations. Social motives are described by experiences of social activities consumers can gain *Outside their home* (S1) or by communicating with others having *Similar interest* (S2). Another social motive is *Peer group attraction* (S3) when people meet each other at a store. Many shopping experiences are getting service and respect. These feelings can be attained in a (limited) master-servant relationship, because a store ´serves´ the public (*Status an authority* = S4). At last, consumers can be motivated by a *Pleasure of bargaining* (S5), or comparing prices and special sales (Tauber, 1972).

When there is no social or personal motive during shopping and shopping is only a function for just buying, the only things that have to be allocated are time, money and effort. The above literature suggests that there is many other variables that might be the reason why people shop. Another thing is that retailers have observed that not all their costumers' behavior is well planned and many buy on impulse or enter a store on impulse (Tauber, 1972). There could be many reasons why people shop, some are planned and some might not be planned. Therefor it is good to know how a shopping path works or better how someone makes the decision of entering a store and actually buying a product, also known as the buying process.

Buying Process

Souminen (2005) describes five steps when consumer purchases a product (activate, browse, configure, decide and purchase). Solomon, Bamossy, Askegaard & Hogg (2002) divides the buying process in problem recognition, information search, evaluation of alternatives and at last, product choice. Also Steinfield, Bouwman & Adelaar (2002) and Kollmann, Kuckerts & Kayser (2012) describe the purchase process, though they speak about a three-phased process. They all have some similarities, but the actual buying process can be best explained with the Consumer Decision Process (CDP) described by Engel, Blackwell & Miniard (2001) as this model includes all phases used in previous literature.

This process starts with *Recognition of needs* (1) when there is a difference between the desired state and the current state of a consumer. After this phase consumers will be in search of information and want to *Satisfy the need* (2). Engel et al. (2001) distinguish two types of sources a consumer can consult: marketing dominated sources (websites, store, advertisement, salespersons, etc.) and non-marketing dominated sources (family, friends, etc.). Once information is collected the *Evaluation of the alternative products* (3) starts. When this is done the consumer will have to make a choice and will proceed to *Purchase* (4). In this state he can also be influenced by experience, advertisements etc. After purchasing, the *Consumption* (5) or the use of the good will follow. Then, in the sixth phase the purchased good will be evaluated on the *Consumers satisfaction* (6). At last, the product will enter the *Divestment phase* (7), where it or its residue will be disposed (Engel et al., 2001).
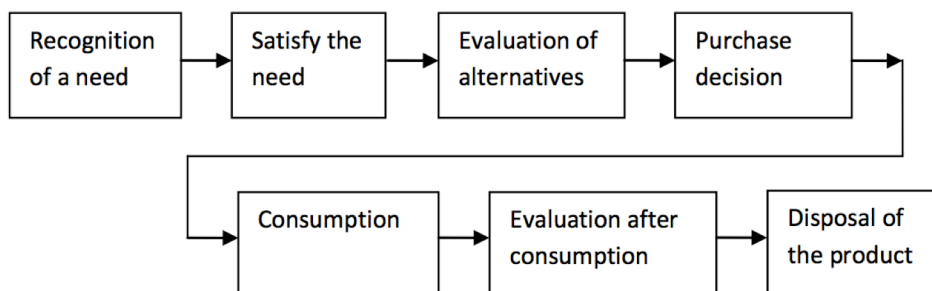

Figure 2-1 Consumer Decision Process (Engel et al., 2001)

Impulsive behavior

Consumers usually go through the above-described stages of the CDP before the make a purchase decision. However, consumers often neglect these stages and show impulsive behavior while shopping (Mogelonsky, 1998). This impulsive behavior is provoked when a consumer feels a powerful, persistent and sudden desire to make an unintended purchase after being exposed to certain stimuli. Stage one of the CDP, *Recognition of a need,* was not active; the consumers was not in need of the product, therefore there can be spoken of an unintended purchase (Rook & Hoch, 1985; Rook, 1987; Rook & Gardner, 1993; and Rook & Fisher, 1995).

According to Meng & Xu (2012) three factors are influencing consumers' impulse behavior: *Personal factors* (1), *Product factors* (2) and *Situational factors* (3).

Personal factors deal with al sorts of segmentations made on the consumer. This could be socio-demographics, psychographics and the motivational orientation. Shoppers motivated by hedonic values, also known as recreational shoppers have not planned their shopping and thereby demonstrate a more impulsive shopping behavior, according to Bellenger & Kargoankar (1980). Beatty & Ferrell (1998) also suggest a strong link between hedonic shopping behavior and impulse shopping. These segmentations will be more widely discussed in Paragraph 2.3.

Product factors are related to attributes of the product and its representation. Literature from the nineties suggests low priced products and product with less product knowledge are bought more on

impulse (Rook & Hoch, 1985; Cobb & Hoyer, 1986). Additional in this, Bellenger, Robertson & Hirschman (1978) presented a theoretical list of these kinds of products, which are more bought on impulse. But more recent literature also claims high priced products and high involvement, such as jewelry and art, is also bought on impulse. Yet another author (Kollat & Willet, 1967) suggested way before that other product attributes such as size, seasonality and stock availability are related to impulse shopping.

More interesting for this research are the situational factors, which are suggested by (Donovan & Rossiter, 1982; Steenkamp, Baumgartner & Van der Wulp, 1996; and Xu, 2007) that they have powerful and persistent urge evoking impulse behavior. Store environment (ambient, design and display) are suggested by Donovan & Rossiter (1982) to have significant influence on impulse shopping behavior. Here over more in Paragraph 2.2, where this store environment will be more thoroughly discussed.

Conclusion

There are many reasons why people shop. Tauber (1972) groups them in two types: personal and social motives. Personal motives are those reflecting on the consumer itself: diversion of the routine on their daily life or simply because they want to do a physical activity, since shopping provides a walking activity. Social motives are described by experiences of social activities consumers can gain by communicating with others having similar interest or by having pleasure with bargaining or comparing prices.

The actual shopping and purchasing goods could be planned or unplanned. Engel et al. (2001) made a model of the Consumer Decision Process in which the phases of a planned purchase is clarified. This process starts for the consumer with recognition of needs and with collection information eventually evaluation the alternative products. But in the research of Meng & Xu (2012) literature told that also unplanned purchases happened when consumers feel a strong desire to buy a good, without having the need for it.

This impulse behavior is according by Meng & Xu (2012) influenced by three factors: personal, product and situational factors. Personal factors are the many segmentations that can be made between consumers, such as socio-demographic segmentations, motivational orientated and many more. Product factors are prizing of the product and the knowledge a consumer has on the product. Other product factors that might influence the impulse behavior are the size and seasonal bounding of a product. Situational factors are factors suggested by Donovan & Rositer (1982) such as ambient, design and display. According to Donovan & Rossiter (1982) these are of high significance in influencing the impulse shopping behavior. In the next paragraph these situational factors; environmental characteristics or atmospherics will be discussed.

2.2 Atmospherics

This paragraph will explain the context in which atmospherics must be seen. On macro level, higher level of analysis, the attributes of a mall will be debated. On a smaller, micro level, the characteristics of a retail store will be discussed. At last, in

the third subparagraph there will be deeper zoomed into the atmospherics on both levels.

Mall attributes

Walking through a mall there are several features like access, promotion, service and atmospherics that describe a mall and create an image of a shopping mall. In this part these features or attributes of a mall will be discussed and distinguished. Interesting is to know what their influences are on consumer shopping behavior. Are there significant sources that describe such a model?

Many studies in the field of retail real estate have attempted to create the perfect model to describe the retail image of an individual store (supermarkets, department stores and specialty stores). A lot less studies have been conducted on the image of a shopping mall as a whole (Frasquet et al., 2001; Finn & Louviere, 1990; Nevin & Houston, 1980; Howell & Rogers, 1981; and Bellenger, Robertson & Greenberg, 1977). One of the first to describe the retail store image was Martineau (1958), who defined it as "the way in which the retail store is interpreted in the consumer's mind, partly by its functional qualities and partly
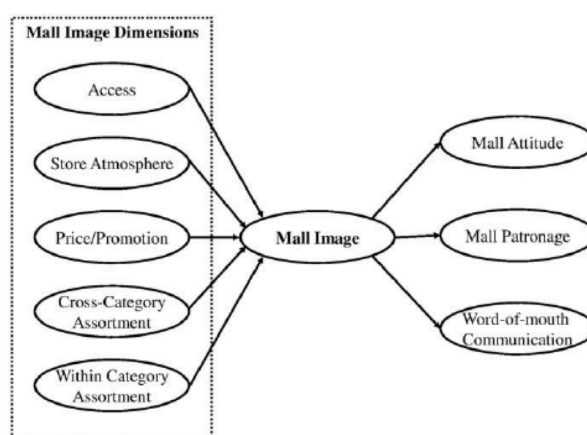

Figure 2-2 Mall image (Chebat et al., 2010)

by an aura of psychological attributes'. Since then multi-attribute approaches have been used in several studies that look into the retail store image. All of these previous studies distinguished certain attributes. Similar to these individual store studies many studies on shopping center images have used and conducted this multi-attribute approach to shopping centers (Finn & Louviere, 1996; Dennis et al., 2002; Pessimier, 1980; and Sit et al., 2003).

One study that took over the multi-attribute approach of the individual retail store of Ailawadi & Keller (2004) was the study by Chebat et al. (2010). Chebat et al. (2010) uses the same five dimensions (or attributes) of describing the image of a mall as Ailawadi & Keller (2004) uses to describing the store image. Chebat et al. (2010) tested these attributes in two different malls in a large city in Canada (N=861). Here was tested if this model was valid for predicting a mall image measuring in relation to mall attitude, mall patronage and word-of-mouth communications (see Figure 2-2).

The Chebat study is not the only study that has been conducted when it comes to creating a model that describes what mall image consists of. Based on previous studies Sit et al. (2003) found that the image of a shopping center is based on seven attributes. The study of Sit et al. (2003) can be seen as a meta-data analysis study on establishing the attributes that include all variables that represent the image of a shopping mall. Many studies describe mall image as a product of four elements or so called 'big four' attributes, namely merchandising, accessibility, services and atmospherics (Dennis et al.,

2002; Finn & Louviere, 1996; Ahn & Ghosh, 1989; Pessimier, 1980; Sit et al., 2003; Borgers & Vosters, 2011). However, these studies overlook three other important dimensions that have influence on the image of a mall, being entertainment, food and security (Bellenger et al., 1977; Nevin & Houston, 1980; Wakefield & Baker, 1998; and Frasquet et al., 2001). These have been discussed in many studies and can be added to the four-dimension definition of a mall image. This set of these seven attributes therefore forms a good base for measuring a mall image. The five dimensions discussed before of Chebat et al. (2010) can also be found in these seven attributes (Table 2-1).

Store characteristics

The previous subparagraph discussed the shopping mall image and her attributes. This subparagraph discusses the retail image on a store level (micro level). The attributes of a retail store image or in many studies named: store characteristics can be found. Some studies on store level have used literature of studies on mall level and vice versa. This results in overlap. This will be discussed in this subparagraph.

Many studies have conducted research in the dimensions of retailer' image or characteristics of a store image (Ailawadi

Table 2-1 Mall attributes (Sit et al., 2003)

	Mall attributes
1	Merchandising
2	Accessibility
3	Services
4	Atmospherics
5	Entertainment
6	Food
7	Security

& Keller, 2004; Bearden, 1977; Yoo, Park & MacInnis, 1998; Turley & Milliman, 2000; and Du Preez et al., 2008). However, they all have different determinations of the attributes that describe a retail store image, but they all have some overlap. Table 2-2 shows the different articles in one overview in order to compare the different descriptions on a retail store image.

Ailawadi & Keller (2004) speak about five dimensions that have also been used by Chebat et al. (2010) who did research on shopping mall image (discussed in previous subparagraph). Until 1998 only two studies investigated the effect of environmental characteristics on in-store emotions (Donovan & Rossiter, 1982; and

Bloch, Ridgway & Dawson, 1994). Both focused on store atmosphere and facilities (the attribute that Ailawadi & Keller (2004) did not distinguished in their study). Yoo et al. (1998) revealed seven factors that also corresponded with studies of Du Preez et al. (2008), James, Durand & Dreves (1976), Louviere & Johnson (1990) and Zimmer & Golden (1998). Yoo et al. (1998) broke up the factor *service* into *salesperson service* and *after sale service*. Compares with the much older study of Bearden (1977), Yoo et al. (1998) has also much overlap with this model of attributes. In the study of Bearden (1977) it was pointed out that the right *atmosphere* contributed the most to store choice of consumers and leaves the attributes *location* and *parking* behind.

Table 2-2 Store characteristics of different articles

Store characteristics	Bearden, 1977	Yoo et al., 1998	Ailawadi & Keller, 2004	Du Preez et al., 2008
1	**Selection**: Selection, assortment of products. **Quality**: Quality of the products.	**Product assortment**: Variety of products and brands availability of new and popular products.	**Cross-category assortment**: Broad but not to widely extended assortment. **Within category assortment**: Having a good amount of SKUs (Store Keeping Unit) within a category.	**Merchandise**: Quality, price and assortment of merchandise.
2	**Price**: price of products.	**Value**: Value and quality of products and the appropriateness of price.	**Price/promotion**: Price perception, price format and promotion.	**Promotion**: Incentives, displays and advertising.
3	**Sales people**: Friendly store employees.	**Sales people service**: Knowledge and kindness of salespersons. **After sale service**: Return, repair and refund policies.		**Sales personnel**: Interaction and appearance of personnel. **Service**: Delivery, after-sales and payment options.
4	**Atmosphere**: creating a certain atmosphere.	**Atmosphere**: Design, lighting, inside decoration and music.	**Store atmosphere**: Creating an in-store personality and pleasant atmosphere.	**Atmosphere**: Décor, sound and smell.
5	**Location** of a store. **Parking**: Available and affordable parking facilities.	**Location**: Location, transportation and parking space.	**Access and location** of a store;	**Convenience**: Location, parking and transportation
6		**Facilities**: store size and space for rest, leisure and recreation.		**Facilities**: Store layout and dressing rooms.
7				**Institutional**: Store reputation and clientele.

Atmospherics

In both, retail store image and shopping mall image, atmospherics are named as one of the attributes/characteristics. Can these atmospherics be specified and are there differences at the between atmospherics on mall level and store level? This subparagraph will discussed previous literature on atmospherics. Sometimes it is difficult to tell if an item is an atmospheric or another store characteristic/mall attribute, because different studies have different explanations. This subparagraph will shed light on several studies in order to clarify the difference.

Atmospherics strongly provide consumers with an indication of the quality of a shopping mall (Howell & Rogers, 1981; Sit et al., 2003; and Howell, 2005) and with creating the correct ambiance (Anderson & Golden, 1984). Physical environment, consisting of music, aromas, lighting, décor, interior architecture, layout and cleanliness (Baker, 1986), is an important determinant of shopping behavior (Bellenger et al., 1977; and McGoldrick & Thompson, 1992). These atmospherics influence the emotional state and therefore have an effect on behavioral responses (Bloch et al., 1994; Jacobs, 1984; and Kowinski, 1985). The linkage between emotional response and the physical environment is supported by store-level research (Baker, Levy & Grewal, 1992). Basically it is explained with the Mehrabian & Russell's model (1974), which conceptualizes the impact of environmental factors on shopping behavior. Environmental cues/information influences the emotional state of a consumer, which in turn induce people to approach or avoid the environment (Kalcheva & Weitz, 2006).

As stated before, Bearden (1977) did a study on ´determinant attributes of consumer behavior´ and noticed significant differences between some attributes he used when comparing downtown shopping versus a shopping in a shopping mall. *Atmosphere, Location, Parking* and friendliness of *Salespeople* (in this order) showed significant results and that might say something about the importance of *atmospherics*. Kotler (1973) who did research in marketing tools already suggested that *atmosphere* is one of the most significant feature of selling a product, and thus interesting to look into some more.

Kotler (1973) made a description on what an atmosphere is and what atmospherics are. ´Atmospherics is the effort to design buying environments to produce specific emotional effects in the buyer that enhance his purchase probability´. Also be seen as ´the air surrounding an sphere´ and an atmosphere is apprehended through
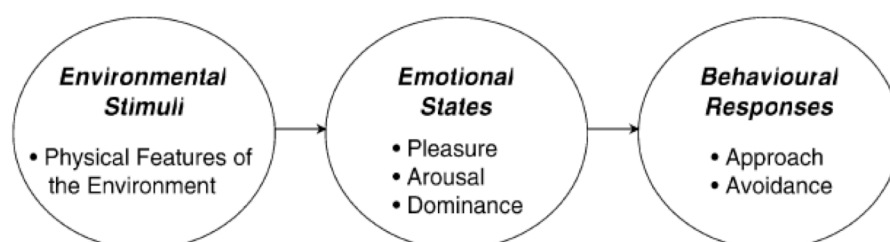

Figure 2-3 Mehrabian & Russell's model (1974)

sensory stimuli. For this reason Kotler (1973) grouped the atmospherics through sensory channels. These are sight, sound, scent and touch. With this description Bitner (1992) was able to make a model that would describe all the atmospherics on store level (see Table 2-3).

Deeper focused on these atmospherics Turley & Milliman (2000) made five categories. But comparing these atmospherics with the store characteristics discussed in the previous subparagraph, atmosphere is one of the store characteristics, some are contradicting. For example Turley & Milliman (2000) see *parking availability* and *employee characteristics* as atmospherics while Yoo et al. (1998), Bearden (1977) and Du Preez et al. (2008) see them as store characteristics but not part of the atmosphere. Needed is evaluation on what is an atmospheric and what is only a store characteristic. For stating what is covered with the term atmospherics, the study of on mall level of Wakefield & Baker (1998) is interesting where they distinguished three groups of atmospherics.

Table 2-3 Atmospherics by Bitner (1992)

Physical Dimension
Ambient Conditions
• Temperature
• Air quality
• Noise
• Music
• Odor
Space/Function
• Layout
• Equipment
• Furnishings
Signs, Symbols, Artifacts
• Signage
• Artifacts
• Style of décor

Few studies have investigated the effects of the different atmospherics on the behavior response of the consumer. The study of Wakefield & Baker (1998) did this on mall level (macro level). In this study different environmental characteristics were analyzed how and which elements contributed the most to the *desire to stay* and to *consumers' excitement*. Wakefield & Baker (1998) distinguished three atmospheric groups with their study: Ambience, Design and Layout.

These three can be subdivided into ten atmospherics (on mall level):
- *Music, aroma, lighting & temperature (Ambience);*
- *Architectural design, interior décor & color (Design);*
- *Routing through/navigation to stores, food and restrooms (Layout).*

All atmospheric elements were also found and discussed in the meta-analysis of Sit et al. (2003) that was discussed before. Environmental cues that cannot be placed under one of these groups might not be an atmospheric, but just a store characteristic or a mall attribute.

Conclusion

The first part of this paragraph described the image of a mall and the articles describing the mall attributes that build this image. The most profound and returning article is that of Sit et al. (2003) in which the 'big four' are extended with three to a total of seven attributes. Because this research is trying to explore the preferences of consumers in relation to the characteristics of a store the same

elaboration was needed for a retail store image.

The retail store image is explained with store characteristics. Table 2-2 gives an overview of some articles that show different explanations of these store characteristics. From the conducted literature review Table 2-4 can be extracted. Further in this study there will be referred to these seven as store characteristic constructs. To the seven disaggregated characteristics of the store atmosphere will be referred to as atmospheric constructs.

2.3 Consumer segmentation

For retailers and shopping mall developers it is important to ensure that a mall maintains its relevance with its consumer segments (Machleit, Meyer & Eroglu, 2005). Therefor it is necessary to get more

insight in the different kind of consumer segmentation. Many studies have segmented consumers based on socio-demographics, psychographics and motivational orientation. In this paragraph literature will be presented in order to clarify the importance of segmentation in relation to mall image and retail store image.

Socio-demographics

Many studies suggest that a segmentation of consumers based on socio-demographics (age, gender, income, etc.) can be made when it comes to measuring consumer behavior in combination with mall attributes or store characteristics (or atmospherics in particular). This can be concluded from research were the differential effects were examined of socio-demographics on the relationship between shopping mall attributes and

Table 2-4 Store characteristic constructs

Store characteristic constructs	Disaggregated characteristic constructs
1. Product assortment: variety of products and brands;	
2. Price-quality: Value and quality of products and the appropriateness of price;	
3. Personnel and services: knowledge and appearance of personnel and aftersales service;	
4. Store atmosphere: Creating an in-store personality and pleasant atmosphere;	4.1 **Music:** volume and background noise; 4.2 **Lighting:** amount and color of light; 4.3 **Temperature**; 4.4 **Interior design:** composition and color of ceiling, floor and walls; 4.5 **Shop window:** size of shop window, signage and window dressing; 4.6 **Layout**: furnishing, greenery and routing; 4.7 **Crowding:** amount of consumers.
5. Location of a store;	
6. Space aspects: store size and space;	
7. Image: Store reputation and clientele.	

consumer behavior (Raajpoot et al., 2008; Evans et al., 1996; Jackson et al., 2011; Lim et al., 2007; Chebat et al., 2005 and Massicotte et al., 2011). Other studies suggest consumer segmentation can be made based on differences that socio-demographics have on other areas, such as price knowledge (Magi & Julander, 2005), shopping orientation (Allard et al., 2009), impulse shopping and spending power (Pentegost & Andrews, 2010).

Segmentation based on gender

Raajpoot et al. (2008) investigated the behavior of consumers divided in male consumers and female consumers. In particular, they investigated the differential effects of gender on the relationship between mall attributes and consumer behavior. A number of 1015 consumers were interviewed. This study showed some significant differences between men and women. Three significant differences of this study were that men consider *employee behavior* more important in evaluating their experiences, when better product assortment is perceived. Women regard their shopping experience to be more exciting and a better *access* increases the excitement of women more. Together with results of Evans et al. (1996) in Raajpoot et al. (2008), research suggest that there are fewer differences between men and women in consumer behavior than popular press would suggest. But when it comes to way finding and appreciation of layout, results vary significantly between men and women. Men use more landmarks, while women rely more on verbal messages from other people in a mall (Chebat et al., 2005). Another study (Jackson et al., 2011) investigated to which extent attitudes toward mall attributes derived from mall

visit differ across gender and generational cohorts. Females show more positive attitudes towards hygiene factors and entertainment options in a mall compared to males. Lim et al. (2007) concluded that women evaluate store characteristics differently than men. These results confirm the conclusion that there are differences, although there are not many. Some studies (Cleveland et al., 2003; Jackson et al., 2011) ascribe these differences to the fact that women might be more sensitive to environmental aspects in a shopping mall.

Segmentation based on generational cohorts

Many studies have been done on generational cohorts (Jackson et al., 2011, Pentecost & Andrews, 2010) and age (Massicotte et al., 2011) and study if they differ in shopping behavior. Jackson et al. (2011) showed that generational differences exist in attitude towards *entertainment*, *location* and *mall hygiene*. Mitchell (2003) states that cohorts encompass groups of people who grew up together and experience similar life events and that that the main reason is why they behave similarly. *Generation X* (born 1965-1975) places less importance on value, quality and comfort comparing to *Baby Boomers* (born 1946-1964) and the *Builder generation* (born 1920-1945) (Yan, 2006). According to Bakewell & Mitchell (2003) and Bakewell et al. (2006) *Generation Y* (born 1976-1994) has a general liking for purchasing, significant spending power, spends more often and is likely to spend more impulsively (Pentegost & Andrewsa, 2010). Massicotte et al. (2011) did research (N=265) in the effects of mall atmosphere and self-congruity (=consistency between the ideal self and the actual self) and what the

differences are between older and younger consumers. The results show that the direct effects of mall atmosphere on self-congruity are only significant with teens. In 2015 teens do not belong to *Generation Y,* but to *Generation Z* (born 1994-and further). In addition to the literature on generation cohorts one must keep in mind that the boundaries of the discussed generations are vague and debatable.

Segmentation based on income

In the study of Allard et al. (2009) 772 consumers have been interviewed in two shopping malls. This study establishes that malls can achieve differentiation from competing malls by focusing on one consumer orientation (see next subparagraph). The study categorized three income levels: low income (less than 29,999$, 26.1%), average income (from 30,000$ to 59,999$; 31.4%), and high income (60,000$ and more; 42.5%). Interesting result stated that shopping mall consumers of all income levels appealed to hedonic values (=shopping is an escape, adventure and truly a joy), although the low and average income groups showed more appeal to these values. In addition Allard et al. (2009) also showed that high-income consumers are more appealed to utilitarian values (=accomplishing their shopping trip and finding what their searching for) than the low and average classes. These classes are respectively non-significant towards utilitarian values. When it comes to income and stores' relative price levels (*store-price knowledge*) it appeared that the effect of income is not significant (Magi & Julander, 2005).

Segmentation based educational attainment

Magi & Julander (2005) found a positive effect of education on *price knowledge* and a negative effect of education on *search of product prices*. This could be explained because consumers with higher education often have a type of occupation that requires long working hours, thus less time to search for product prices. Although *store-price knowledge* might not differ under different incomes, people with different incomes shop differently derived from the different values (hedonic/utilitarian) they show.

Segmentation based on work status

Evans et al. (1996) state that the differential effect of gender and work status on shopping behavior in shopping malls is infrequently examined. Evans et al. (1996) examine the differences in shopping behavior of women who are employed and those who are not. It is suggested that time pressure alter the frequency and duration of shopping activities of working women and therefore changes their shopping behavior. Because of the infrequent examination of these differential effects Raajpoot et al. (2007) devoted his research to examine the differential role of gender and work status on the relationship between shopping mall and store characteristics. This research found four differences between working women and homemakers. Homemakers base their overall evaluation more on their emotional response than working women. Secondly, working women base their decision of returning to a shop on overall evaluation more than homemakers. Thirdly, employee behavior is of higher importance for working women when they evaluate their shopping experience. And finally, homemakers are more concerned

about accessibility than working women. These finding suggest that there are differences in consumers' shopping behavior, depending on their work status. On the other hand, Evans et al. (1996) suggests that these differences may also be the result of the fact that working women shop as recreational activity (hedonic) and homemakers do not (differs from the findings of Raajpoot et al., 2007). From previous researches can be concluded that work status has an influence on evaluation of shopping experience such as employee behavior and accessibility. These are shop characteristics and therefore work status may influence the evaluation of characteristics of the shopping environment.

Psychographic characteristics

Beside socio-demographics, consumers can also be segmented based on their psychographic characteristics. The term psychographics concerns properties that are strictly mental, such as beliefs, personality traits, attitudes, opinions, etc. (Dorny, 1971). Confused in a lot of scientific literature, psychographics do not concern overt activity and behavior. These measures belong to the term "lifestyle". Many consumer analysts do not make the distinction between the two terms and use "psychographics" and "lifestyle" interchangeably. This trend continues throughout the psychographic and marketing research field (Anderson & Golden, 1984). According to Wells (1974) psychographics methods have many advantages over alternative methods when it comes to describing consumers. However, it is not yet clear which measurement techniques work best and the results of psychographic analysis are

unstable. This study avoids the use of psychographic methods/analysis, because of its controversy and complexity.

Motivational orientation

Sit et al. (2003) conducted a meta-analysis where was noted that only few studies explored the contribution of attributes of a shopping mall to the segmentation of shopping mall visitors. This study was an elaboration on previous research done by Stone (1954) that first introduces the notion of segmentation of consumers based on their motivation. Since than a lot of research has been done on motivation of shopping mall visitors. In these studies a lot of segments of consumer motivations have surfaced. These segmentations are elaborated on by Kalcheva & Weitz (2006), illustrated in Table 2-5. As seen in the table all the segmentations can be ascribed to two categories, namely task-oriented and recreational-oriented). Triandis (1977) described these already as the *economic oriented shopper* that show a more utilitarian outcome resulting 'from a conscious pursuit of an intended consequence' while a *recreational oriented shopper* shows outcome more related to spontaneous hedonic responses (Babin et al. 1994). Further in this study the terms *Hedonic* and *Utilitarian* will be used to make segmentation in consumer motivations. This is because the majority of the investigated studies prefer to address these descriptions to these two types of consumers.

Important for this study is that Kaltcheva & Weitz (2006) found that the consumers motivational orientation moderates the arousal produced by a store environment on the pleasantness of the environment.

High arousal from the store environment has a positive effect on the pleasure of hedonic consumers, but it has a negative effect on pleasure when the consumer has utilitarian motivations (see also the Mehrabian & Russell's model in §2.2). Which means that high arousal leads to more visits and purchases by hedonic consumers (Kaltcheva & Weitz, 2006). Also it is said in Dawson et al. (1990) that hedonic consumers may pay more attention to store characteristics and mall attributes and therefore have more inputs in their decision making process (CDP in §2.1).

Conclusion

Previous studies confirm consumer segmentations can be made in relation to shopping behavior. Previous research found that woman and men are not as different in their consumer behavior as suggested by popular press (Raajpoot et al., 2008). However, according to Chebat et al. (2005) and Jackson et al. (2011) there is a significant difference between men and women when it comes to appreciating *layout* and *routing* of a shopping environment and attitudes towards mall attributes.

Many studies have also sought to find differences in shopping behavior between generational cohorts (Jackson et al., 2011, Pentecost & Andrews, 2010) and age (Massicotte et al., 2011). From previous research five generation cohorts have been abstracted; *Builder generation* (1920-1945), *Baby Boomers* (1946-1964), *Generation X* (born 1965-1975), *Generation Y* (1976-1994) (Yan, 2006) and *Generation Z* (1995-and further)**.** Because the people within these cohorts grew up "together" and share life events, they behave similarly (Mitchell, 2003).

Table 2-5 Motivational orientations by Kaltcheva & Weitz (2006)

Task-Oriented and Recreational Shopping Motivational Orientations: Conceptualizations in the Shopping-Behavior Literature

Article	Motivational Orientation Labels	Definitions	
		Task Oriented	**Recreational**
Bellenger and Korgaonkar (1980)	Economic shoppers Recreational shoppers	Economic shoppers: Consumers who have a high opportunity cost for shopping activities. Economic shoppers feel that shopping is not an enjoyable use of their time (p. 79).	Recreational shoppers: Consumers who have a low opportunity cost for shopping activities. Recreational shoppers feel that shopping is an enjoyable use of their time (p. 79).
Westbrook and Black (1985)	Economic shoppers Social shoppers	Economic shoppers: Consumers who engage in shopping primarily to acquire (a) needed product(s) (p. 85).	Social shoppers: Consumers who engage in shopping primarily to satisfy needs unrelated to the acquisition of needed products (p. 85).
Dawson, Bloch, and Ridgway (1990)	Product-oriented motives Experiential motives	Product-oriented shopping motives: Consumers visit stores to make needed purchases or acquire needed product information (p. 409).	Experiential shopping motives: Consumers visit stores to derive pleasure from the visit itself (p. 410).
Babin, Darden, and Griffin (1994)	Utilitarian shopping value Hedonic shopping value	Utilitarian shopping value: Derived from task completion, the achievement of an intended outcome that the consumer is pursuing out of necessity (pp. 645–46).	Hedonic shopping value: Derived from the spontaneous hedonic responses elicited in the course of shopping activities (pp. 645–46).
Reynolds and Beatty (1999)	Shopping reluctance/apathy Shopping enjoyment	Shopping reluctance/apathy: Satisfaction is not derived from the shopping activity itself (p. 511).	Shopping enjoyment: Satisfaction is derived from the shopping activity itself (p. 511).

According to Allard et al. (2009) income level influences valuation of consuming; hedonic or utilitarian value of shopping. People with low income, average income and high income may have different reasons to shop. Another segmentation can be made on the level of education. The level of education has an effect both on price knowledge and search of product prices (Magi & Julander, 2005). Yet another consumer segmentation can be made on work status. Consumers exhibit different kinds of shopping behavior, depending on their work status. Evans et al. (1996) suggest that these differences are the result of the fact that working women (employed) shop as recreational activity (hedonic) and homemakers (unemployed) do not. From previous researches can be concluded that work status has an influence on evaluation of shopping experience such as shop characteristics. Psychographic segmentation concerns differentiation based on mental properties and is an advantageous method of describing consumers. However, its use and analysis is complex and know many controversies and therefore difficult to apply in research.

Kalcheva & Weitz (2006) elaborated multiple studies on the motivational orientation of consumers (illustrated in Table 2-5). All segmentations made in these studies could be ascribed to two categories. Triandis (1977) described these already as the economic oriented shopper (with utilitarian values) and recreational oriented shopper (with hedonic values). Further in this study these consumers will be referred to as utilitarian consumers and hedonic consumers. Important to know is that Dawson et al. (1990) said that hedonic

consumers might pay more attention to store characteristics and mall attributes.

2.4 Conclusion of literature review

The literary research that has been conducted provides the foundation of this study. This section summarizes the findings from the literature review. Consumer shopping behavior, atmospherics of the shopping environment and consumer segmentation will be discussed subsequently.

According to Tauber (1972) consumer shopping motives can be either personal or social. Personal being motives that concern the person him or herself and social consisting of experiences of social activity. Shopping concerns making a purchase, purchasing is either planned or unplanned. The model of Consumer Decision Process (CDP) clarifies the phases of planned purchasing. Unplanned purchasing concerns the process of making a purchase when feeling a desire without having a need. This unplanned impulse behavior is influenced by personal, product and situational factors. More interesting for this research are the situational factors such as ambience, design and display, which are suggested to have powerful and persistent urge evoking impulse behavior.

Atmospherics are such situational factors that influence impulse shoppers. Atmospherics are not the only situational factors that influence the consumer decision process, but according to previous studies they have the greatest influence on consumer behavior. Atmospherics influence consumers on a macro and micro level. The macro and micro level of atmospherics concern the influence of

atmospherics on the mall image and store image respectively. Because this study is trying to explore the preference of consumers in relation to the characteristics of a store seven store characteristics will be explored, namely: *Product assortment, Price-quality, Personnel & services, Store atmosphere, Location, Space aspects* and *Image*. The *Store atmosphere* is disaggregated into seven atmospherics: *Music, Lighting, Temperature, Interior design, Shop window, Layout* and *Crowding*.

The literature research looked in the last part at differences between consumers based on gender, generation cohorts, income, educational level, work status and motivational orientation. There will be no psychographic segmentation, because results of psychographic analysis have proven to be unstable and thus no reliable conclusions can be drawn from such segmentation.

Segmentation based on gender is relevant, because men and women are different in their appreciation of layout and routing of a shopping environment.

When it comes to generational differences attitude towards entertainment, location and hygiene varies between different cohorts. There are five cohorts**:** *Builder generation, Baby boomers, Generation X, Generation Y* and *Generation Z.*

Income level also has an influence on shopping behavior, because people with low and average income tend to appeal more to hedonic values then high-income consumers.

Furthermore a significant positive effect of education on price knowledge has been found in previous research and a negative effect of education on the search of product prices.

Yet another consumer segmentation can be made on work status. Working women (employed) shop as recreational activity (hedonic) and homemakers (unemployed) do not. From previous researches can be concluded that work status has an influence on evaluation of shopping experience such as shop characteristics.

And finally segmentation based motivational orientation of consumers, which is a very important element. From meta-analysis has been concluded that consumers can either have a utilitarian or hedonic shopping orientation. Important to know is hedonic consumers may pay more attention to store characteristics and mall attributes.

3 Research Methodology

In the previous chapter literature showed the importance of the consumer segmentations with regard to the influences of atmospherics in a shopping environment, both in term of demographic as motivational orientation. A list of store characteristics was also determined in the previous chapter. This chapter will describe how the different consumer preferences will be measured, how motivational orientation and impulse behavior will be determined and what kinds of analysis will be used in this study. Paragraph 3.1 discusses the operationalization of the questionnaire. Paragraph 3.2 refers to objectively measured store characteristics. Part of the research methodology is also the explanation and selection of the shopping centers and the stores where the survey for this research will be conducted. This is described in Paragraph 3.3. The data collection procedure will be discussed in Paragraph 3.4 and eventually the methods of analyses will be proposed in Paragraph 3.5.

3.1 Operationalization

For this study a questionnaire was created that can be found in Appendix A. Consumers were approached when they left one of the selected stores. They were asked to fill the questionnaire consisting of three parts. In the first part respondents were asked about their impulse behavior, motivational orientation and familiarity with three stores in the shopping mall that they were visiting. These three stores were the store they just left (store X) and the other two stores were store Y1 and Y2. With survey question 4 was ascertained

which of Y1 and Y2 a respondent was most familiar with. Respondents were asked when they decided to enter the store they just left (store X), in order to determine if they were visiting that store on impulse or planned. If they answered 'decided to enter the store when passing-by', then their decision was strictly made on impulse. Also the purpose of their visit to the shopping mall was asked in order to determine their motivational orientation. In Paragraph 2.3 different motivational orientations have been discussed. In this study the two main distinctions between utilitarian and hedonic shopping motivation were examined. Three choices in the survey were possible: task-orientated (utilitarian), recreational-orientated (hedonic) or a combination (both). An open answer was left out, because during test sessions open answers were not utilized.

Next, the respondents were asked which store they preferred for each of the listed constructs (Table 2-4). They compared the store they just left (store X) with the second store, the one they were most familiar with (store Y1 or Y2). The construct Atmosphere in this list was disaggregated into the different constructs that are also described in Paragraph 2.2. At each item the respondents were asked to verbally explain their choice. After that, a 5-point Likert scale was used to measure the respondents' appreciation of the list of constructs for the store they just visited (store X). The 5-point Likert scale ranged from very negative (--) to very positive (++). Previous studies as those from Dijkman (2012), Op Heij (2012), Willems (2012) and Elemans, Tiktak & Seas (2013) also used questions with Likert scales in

order to ask consumers on their opinion on a list of store characteristics.

The third and last part of the survey consisted of questions on personal information of the respondent. Personal information concern the respondent's gender, educational attainment and work status in order to determine the demographic characteristics of the respondents. Common in researches is the phenomenon of the fatigue-effect: respondents get bored and less focused when filling in or answering a questionnaire. Because these questions are in fact characteristics of respondent, they are easy to answer and therefore well suited to be asked at the end of the questionnaire.

Appendix A shows the questionnaire and Appendix C provides an overview of how variables have been defined. The questionnaire is in the Dutch language, because the study is done in Dutch shopping malls. A translation in English can be found in Appendix B.

3.2 Store characteristics

Appendix F provides an overview of 30 disaggregated store characteristics belonging to the 14 store characteristic constructs from the literature review. From these 30 objectively measured store characteristics, it is assumed that they have effects on the 14 characteristic constructs that are queried during the survey. These 30 characteristics in or near the stores under investigation have been measured as objectively as possible before doing the questionnaires. Some of the characteristics are measured with a laser distance measurer or with help of Locatus (2014).

In the data analysis these objective measurements will be used to investigate whether preferences are somehow related to these characteristics.

3.3 Shopping mall and store selection

If a selected amount of variables are to be investigated in a research, non-selected variables must be as equal as possible. This research is trying to measure the appreciation consumers have on store atmospherics. Non-selected variables are the characteristics of the shopping center and are desired not to differ much. Therefore, it was decided to conduct the survey in different enclosed shopping malls in order to exclude differences such as weather conditions, outside temperatures, historical/non-historical environment and other differences common in open air shopping areas.

The Netherlands has dozens of enclosed shopping malls that have a regional function, are successful (low vacancy rate), are currently not in construction and have no bypass function. These criteria are used to eliminate unwanted external effects. European countries each have their own national council of shopping centers and their own way of classifying centers. In order to create a European standard the International Council of Shopping Centers (ICSC) published in 2005 a study where all national definitions and characteristics were discussed. This was needed to facilitate cross-border shopping center comparisons and benchmarking financial and operational performance. The ICSC published a pan-European international standard with a framework of 11 broad-based types of centers which can be grouped into two main categories:

traditional and specialized, comparable with the two U.S. definitions of shopping centers 'General-purpose centers' and 'Specialized-purpose centers'. See for an overview Table 3-1 (Lambert, 2006).

Traditional centers are enclosed or open-air and classified by size. Small traditional centers are divided into comparison-based centers and convenience-based centers. Convenience-based centers offer only stores with essential products (items consumers buy on a regular basis) and a supermarket usually anchors these stores.

Specialized centers are divided in three different centers. Retail park or power center is a consistently designed scheme that contains big-boxed specialist retailers. Factory outlet centers are consistently designed schemes with store units where manufacturers mainly sell surplus stock or prior-season products for discount prices.

Theme-oriented centers are also consistently designed schemes but with stores concentrated or narrowed on a specific retail category (e.g. home furnishing; Lambert, 2006).

The decision has been made to investigate one type of shopping center (traditionally based) and one category of stores. The category *Fashion & Luxury* (Locatus 2014) includes the majority of the stores within traditional centers that are enclosed, have regional function and have low vacancy rates. Within this category the stores with the majority are (fast-moving) clothing stores. See Chapter 4 for more detail. It could be that these fast-moving clothing stores attract more impulse-shopping consumers, which could lead to interesting results of this study.

To exclude convenience-based centers it is best to look at medium and large

Table 3-1

International Standard for European Shopping Center Types

Type	
Traditional centers	
Very large	GLA 80.000 m2 and above
Large	GLA 40.000 – 80.000 m2
Medium	GLA 20.000 – 40.000 m2
Small	
Comparison-based	GLA 5.000 – 20.000 m2
Convenience-based	GLA 5.000 – 20.000 m2
Specialized centers	
Retail park	
Large	GLA 20.000 m2 and above
Medium	GLA 10.000 – 20.000 m2
Small	GLA 5.000 – 10.000 m2
Factory Outlet Centre	GLA 5.000 m2 and above
Theme-Oriented Centre	
Leisure based	GLA 5.000 m2 and above
Non-leisure-based	

Note. Adapted from Lambert (2006)

traditional centers. In the Netherlands good representatives of fast-moving clothing chain stores are brands such as: H&M, Esprit, WE Fashion, The Sting, Mango, America Today, Man at Work, Desigual, etc. This research aims at a considerable share of impulse shoppers and hedonic shoppers. Therefore, chain stores with a high attractive power should not be selected in this research. Eventually three shopping malls, with each three representative fast-moving clothing stores, were selected that fit within the above criteria. The shopping malls are located in the cities Hoofddorp, Amstelveen and Rotterdam. They are located within the Randstad, on the edge of the cities Rotterdam and Amsterdam (see Figure 3-1). The Randstad is the largest urbanized region of the Netherlands and one of the largest urban areas of Europe.

The selected stores had to be closely to each other in the shopping malls to make sure respondents were familiar with all the stores. Variation in store characteristics is required across the stores in the different shopping malls in order to be able to measure consumer preferences on store characteristics. Four stores were found to be interesting for this research in combination with the three shopping malls:

Figure 3-1 Overview of survey locations

The Sting, WE Fashion, Zara and Esprit. In Chapter 4 these shopping malls and stores will be described in more detail.

3.4 Survey process

During three periods of a week surveys were conducted among consumers of the shopping malls. These weeks were randomly chosen in November and December. The days were regular weekdays, no holidays or special activities.

Table 3-2

Overview of survey dates

Location	Date	Time frame
Vier Meren Hoofddorp	December 3, 2014	12:00 – 18:00
Vier Meren Hoofddorp	December 4, 2014	12:00 – 18:00
Stadshart Amstelveen	December 9, 2014	12:00 – 18:00
Stadshart Amstelveen	December 10, 2014	12:00 – 18:00
Alexandrium Rotterdam	December 16, 2014	12:00 – 18:00
Alexandrium Rotterdam	December 17, 2014	12:00 – 18:00

For that reason Christmas holidays were avoided (20 December 2014 till 4 Jan 2015. Surveys were conducted from noon to 6h pm. Due to the fact that opening times of the shopping malls are most of the time between 10h am and 6h pm and the first two hours are often so quiet that doing a survey would be very inefficient. In Table 3-2 an overview can be found of the dates and times the surveys were conducted. Students of the Eindhoven University of Technology, VU University Amsterdam and the University of Amsterdam assisted conducting the surveys during the three weeks.

3.5 Methods of analysis

In this thesis, two methods to analyze the data will be used in order to find answers. How they work and how they were used, is described in this paragraph. An overview of the mean scores of the appreciations of the constructs was made prior to the analyses, followed by the explanation and application of an ordered logistic regression (ordinal regression). Lastly, the main technique used for discrete choice modeling will be discussed: the use of the multinomial logit (MNL) model.

Procedures

This study tries to find the strongest predictors in predicting the overall appreciation of a store among the fourteen store characteristic constructs (including the disaggregated atmospheric constructs; discussed in §2.2). An ordinal regression was performed in order to find the constructs that matter and what their strengths are. See Figure 3-2 for an overview of the analyses. The first analysis will be referred to as Analysis [1A] and the appreciation of the whole store is the dependent variable. The literature review suggests that the seven atmospheric constructs are represented by the construct Atmosphere. A second ordinal regression was performed without these atmospheric constructs in order to compare the different outcomes. This analysis will be referred to as Analysis [1B].

Analysis [2] is the analysis where the construct *Atmosphere* acts as dependent variable and the seven atmospheric constructs as the independent variables. This is done in order to find the strongest predictors in predicting the construct *Atmosphere*.

Analysis [1A]:   Ordinal regression with 14 constructs (incl. atmospheric constucts)
Analysis [1B]:   Ordinal regression with 7 constructs (no atmospheric constructs)
Analysis [2]:   Ordinal regression (*Atmosphere* as dependent variable)
Analysis [3]:   Ordinal regression with 30 measurable characteristics
Analysis [4]:   Multinomial logit model with 30 measurable characteristics
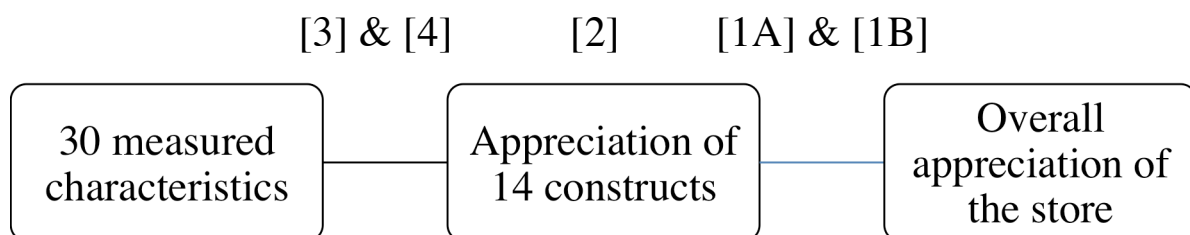
[3] & [4]   [2]   [1A] & [1B]

| 30 measured characteristics | Appreciation of 14 constructs | Overall appreciation of the store |

Figure 3-2 Overview of analyses

The decision has been made to use two types of analysis in order to find the consumer preferences of the 30 measurable characteristics. First, ordinal regression models are estimated in the same way Analysis [1] and [2] are performed with each of the fourteen constructs as dependent variable. These analyses will be referred to as Analysis [3]. The next step analyses will be done with multinomial logit models and these analyses will be referred to as Analysis [4]. These are also performed with each of the fourteen constructs as dependent variable.

Ordinal regression for Analyses [1A], [1B], [2] and [3]

An ordinal regression is a method to estimate the effects of independent variables on an ordered dependent variable. This model incorporates the ordinal nature of the dependent variable.

To understand the ordered logistic regression model, first a binary logistic regression model has to be explained. In order to fit this binary model, a set of regression coefficients are estimated that predict the probability of the outcome of interest. The probabilities are transformed into a linear function of parameters and scores on the independent variables:

$$\ln (\text{prob(event)} / (1 - \text{prob(event)})) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k$$

X_k is the value of the kth independent variable (predictor)

β_0 is the intercept from the linear regression equation (value when the predictor is equal to zero)

β_k is the regression coefficient for the kth variable

The quantity on the left is called *logit*. It is the log of the odds an event occurs. Meaning: the log of the probability an event occurs divided by the probability an event does not occur. The coefficients in the logistic regression tell how much the *logit* changes based on the values of the independent variables (Norusis & SPSS, 2011).

This binary model can be modified to incorporate the ordinal nature of a dependent variable defining the probabilities differently. In the binary model the probability of an individual event is considered. In the modified model the probability of that event and all events that are ordered before it are considered.

In this study respondents rated fourteen constructs of a store and rated the store they visited as a whole. Their appreciations of these constructs and the whole store were given on a 5-point Likert scale with survey questions 7.1 till 7.14 (constructs) and 7.15 (store as a whole). In this case, both dependent and independent variables have an ordinal nature. Appreciations/scores were rated on the scale: *very negative* (1), *negative* (2), *neutral* (3), *positive* (4) and *very positive* (5).

Odds in this study have to be modeled as:

$$\theta_1 = \text{prob(score 1)} / \text{prob(score > 1)}$$

$$\theta_2 = \text{prob(score 1 or 2)} / \text{prob(score > 2)}$$

$$\theta_3 = \text{prob(score 1, 2 or 3)} / \text{prob(score > 3)}$$

$$\theta_4 = \text{prob(score 1,2,3 or 4)} / \text{prob(score >4)}$$

The last category does not have to be calculated, because it is calculated up to and including the last score and equals 1.

All of the odds are calculated as:

$$\theta_j = \text{prob}(\text{ score} \le j) / \text{prob}(\text{score} > j)$$

The ordinal logistic model that integrates the odds for a single independent variable is:

$$\ln(\theta_j) = \alpha_j - \beta X$$

j is category 1 to the number of categories minus 1

The minus sign before the β-coefficient is placed so that larger coefficients indicate an association with larger scores. A negative coefficient for an independent variable show that one value of an independent variable compared to its following value is more likely to receive lower values on the ordinal dependent variable and vice versa for a positive coefficient (Norusis & SPSS, 2011).

Increase of log-likelihood

Each *logit* has its own α_j term but the same β-coefficient. The terms α_j are called thresholds and do not depend on the values of the independent variable. They are like the intercept in a linear regression, except that each *logit* has its own. Before examining the individual coefficients, the null hypothesis that the coefficients of all independent variables in the model are 0 is checked. This can be based on the change in -2 log-likelihood when independent variables are added to a model that contains only the thresholds (intercept). The change in likelihood function has a Chi-Square distribution. If the two log-likelihoods of the model with only the thresholds (LL(0)) and the model with the thresholds and the independent variables (LL(β)) differ, it is a sign that the independent variables have effect on the dependent variable. If the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 has a high significance (sig. < 0.05) the null hypothesis can be rejected (H_0 = the model without the predictors is as good as the model with the predictors) (Norusis & SPSS, 2011).

Observed and expected frequencies

Another way to check the goodness-of-fit for the ordinal regression model is comparing the observed frequencies of the thresholds and the expected frequencies of the thresholds (with independent variables). The thresholds can best be described as estimating the cutoff values of the dependent ordinal variable. The scores of the dependent variable are spread over the number of categories. As said before, each *logit* has its own threshold-value. If the model with its thresholds incorporates independent variables, the thresholds could change. If the model fits well, the observed and expected cell counts are similar and the observed significance level is large for the Pearson and Deviance goodness-of-fit statistics (H_0 = model fits) (Norusis & SPSS, 2011).

Dependent variable

Cat. 1	Cat. 2	Cat. 3	Cat. 4	C. 5
α_j	α_j	α_j	α_j	

The Pearson goodness-of-fit statistic is:

$$X^2 \;=\; \Sigma_j \; (\, (O_j - E_j)^2 \, / \, E_j \,)$$

The Deviance goodness-of-fit statistic is:

$$D^2 \;=\; 2 \; \Sigma_j \, O_j \, \log (\, (O_j - E_j)^2 \, / \, E_j \,)$$

X^2 is Pearson's cumulative test statistic

D^2 is the Deviance cumulative test statistic

O_j is the observed frequency of type j

E_j is the expected frequency of type j

j is the category of the independent variable

Both of the goodness-of-fit statistics should be used only for models that have reasonably large expected values in each cell. If the independent variable is continuous or has many categorical predictors or some predictors with many values, there could be many cells with small expected values. The SPSS software warns about the number of empty cells in the design. In this situation, neither statistic provides a dependable goodness-of-fit test (Allison, 2014).

Strength of association

Also the strength of the association between the dependent variable and the independent variables can be measured.

The three commonly used statistics for this are Cox & Snell R-Square, Nagelkerke R-Square and McFadden R-Square.

The Cox and Snell R^2 is:

$$R^2{}_{CS} \;=\; 1 - (\, LL(0) \, / \, LL(\beta) \,) \, \wedge \, (2 \, / \, n)$$

The Nagelkerke's R^2 is:

$$R^2{}_N \;=\; R^2{}_{CS} \, / \, (\, (1 - LL(0)) \, \wedge \, (2 \, / \, n) \,)$$

The McFadden's R^2 is:

$$R^2{}_M \;=\; 1 - (\, LL(\beta) \, / \, LL(0) \,)$$

R^2 is the multiple correlation squared; measure of strength of association

LL(0)   is the log-likelihood of the model without predictor variables

LL(β)   is the log-likelihood of the model with predictor variables

N is the number of cases

The results of each of the three statistics lie between 0 and 1. A high R-Square indicates that the model has a high goodness-of-fit. If the result is equal to zero the model is not better than one with no predictor variables. The interpretation however is not straightforward and cannot be seen as percentages of prediction (Norusis & SPSS, 2011).

Interpretation of parameters

When the previous three test of *increase of log-likelihood, difference in observed and expected frequencies* and *strength of association* are found positive (=model fits), the parameters can be checked and interpreted. The estimates labeled *Thresholds* are the α_j's and are equivalent to intercept. Interesting are the estimates labeled as β-coefficients. They are the coefficients of the independent variables. If the coefficients of an independent variable are not significant than the variable could better be left out of the analysis. If the coefficients are extremely high it also might be that categories have few cell counts and categories have to be merged. Categorical or ordered independent variables in models with intercepts have a number of coefficients one less than the number of categories of the variable. The last category always has coefficient 0. Coefficients of ordered independent variables should show a linear association to 0 (=last ordered category). If it does not, the variable could better be left out of the analysis. If all coefficients of one variable are set to 0 (instead of only the last ordered category), it could be that variables correlate. In that case a correlation matrix should be made and correlated variables are better to leave out of the analysis.

A positive coefficient for dichotomous, categorical and ordered variables means higher scores are more likely for the dependent variable. A negative coefficient tells that lower scores are more likely. For a continuous variable, a positive coefficient tells that as the value of the independent variable increases the likelihood of larger scores increases (only on the scale of the independent variable). An association with higher scores means smaller cumulative probabilities for lower scores, since they are less likely to occur (Norusis & SPSS, 2011).

Discrete choice modeling for Analysis [4]

A discrete choice situation is one in which respondents choose among a set of alternatives. In this study a discrete choice model is used (Analysis [4]) to compare the results to the results of Analysis [3]. The set of alternatives (the choice set) was between: the store a consumer just left (store X) and another similar store in the shopping center the consumer was most familiar with (store Y1 or Y2). These two stores (alternatives) are characterized by a set of 30 measurable characteristics (Appendix F). The respondents were asked which store they preferred for each of the listed constructs (§2.2). This was done with survey questions 6.1 to 6.14 and in question 6.15 they had to make an overall choice, which store as a whole they deemed better. Discrete choice models usually belong to a random utility model framework in which respondents are assumed to be utility maximizers. The respondents (consumers) perceive a certain level of utility from each alternative. It is assumed that the consumer chooses the alternative with the highest utility, in this survey by identifying the preferred one. One type of discrete choice model will be used in this study, namely the multinomial logit (MNL) model.

Multinomial logit model

This model is used to determine which impact independent variables have on the preferences for a store. The MNL model

has the ability to assess the likely impact of each measurable characteristic on the consumers' preference. The characteristics or variables may have a negative or positive effect on the preferences of the respondents with respect to stores. The MNL model calculates this effect for each variable. This is called the utility weight or β-coefficient (Train, 2009).

Formula of random utility:

$$U_{ni} = V_{ni} + \varepsilon_{ni} = \sum_{k=1}^{K} \beta_k \, x_{nik} + \varepsilon_{ni}$$

U_{ni} is the overall random utility that consumer n obtains from alternative i

V_{ni} is the structural utility of alternative i for individual n

ε_{ni} is the error term or the random utility component

β_k is the utility weight for attribute k

x_{nik} is the score of alternative i on attribute k for individual n

The probability that individual n will choose alternative i is equal to the probability that the overall random utility of alternative i for individual n is higher than the overall utility of all of the other alternatives in the choice set. An assumption must be made in order to determine the probability that an alternative will be chosen from the total set of alternatives. It is assumed that the variance of the error component is equal for all alternatives, that the error components are independent from each other and that the error components follow a double exponential distribution with

mean zero. This all results in a probability function of choice:

$$P_{ni} = e^{V_{ni}} / \left(\sum_i e^{V_{nj}} \right) \quad j = 1, \ldots, J$$

P_{ni} *is the probability of alternative* i *for individual* n

V_{ni} is the structural utility of alternative i for individual n

J is the number of alternatives in the choice set

The utility weight can be interpreted as reflecting the effects of the attributes on the odds of making a given choice or on the underlying utilities of the various choices (Train, 2009).

The software program NLOGIT 5 has the ability to calculate the utility weights that show positive or negative associations for each of the variables and is used in this study (Econometric Software Inc., 2012). In order to measure the strength of the association between the dependent and independent variables of the MNL model, the log-likelihood function or LL(β) of the optimal model has to be calculated. Also the log-likelihood of the null model or LL(0) will be calculated. The LL(β) will be divided by LL(0) and subsequently subtracted from 1. The resulting value is called McFadden R-Square. It is one of the three statistics that was also used for calculating the strength of the association with the ordinal regressions. The value always lies between 0 and 1. A high R-Square indicates that the MNL model has a high goodness of fit (strong association). If it is equal to zero, the model is not better than one with zero parameters. In general, an MNL model with an R-Square higher

than 0.2 performs well and a model with R-Square higher than 0.1 indicates a low but reasonable goodness of fit.

If the analysis shows an error it could be that variables correlate. In that case a correlation matrix should be made and correlated variables are better to leave out of the analysis. If the analysis does not show errors, the parameters of the MNL model show per independent variable a β-coefficient. Variables are always nominal, ordinal or continuous. Nominal and ordinal variables have to be transformed into dummy-variables. A positive estimate means a higher probability the corresponding alternative will be chosen.

3.6 Conclusion

In order to obtain data, surveys will be held with use of a questionnaire. This questionnaire consists of three parts: the first part concerns the consumer's motivation and impulse behavior, the second part is about comparing and evaluating store characteristic constructs and the last part concerns respondents' personnel information.

These surveys will be held in three comparable shopping malls. In each mall, three comparable clothing stores were selected to question consumers who just left one of the stores. The surveys will be held during a period of three weeks in November and December 2014.

In order to find answers regarding the research questions, the software program SPSS will be used to perform ordinal regressions to find the strongest predictors in predicting the overall appreciation of a store and to find the strongest predictors in

predicting the construct *Atmosphere*. For finding consumer preferences of the measurable characteristics it has been decided to perform two types of analyses. The ordinal regression procedure will be used again with the store characteristic constructs acting as dependent variables. Secondly, discrete choice modeling will be used: the multinomial logit (MNL) model. With use of the software program NLOGIT 5, MNL models will be estimated. Store characteristic constructs will act as dependent variables for a second time. In this way the outcome of two different analyses can be compared in search for differences or similarities.

4   Survey locations

This chapter describes the cities Amstelveen, Hoofddorp and Rotterdam. It also describes the shopping malls and the stores where the surveys where held. It is important to define the survey areas before the process of data collection.

4.1 The city of Amstelveen

As Amstelveen is located south of Amsterdam and collides with the capitol, it is deemed part of the agglomeration of Amsterdam. With 41 square kilometers of land and 80,695 inhabitants (January 1, 2010; CBS 2011a), Amstelveen is an area with a high density (2,126 per km2). Amstelveen counts 39,119 households with an average yearly income of € 39,600, which is about € 6,000 above national average. The grey pressure (65 and older) on the population in Amstelveen is higher than average with 18.6% and causes an average age of 41.2 (CBS, 2011a).

Because of the presence of a shopping area in each neighborhood citizens have access to a sufficient number of facilities. In the city center the shopping mall Stadshart has been developed to attract shoppers from
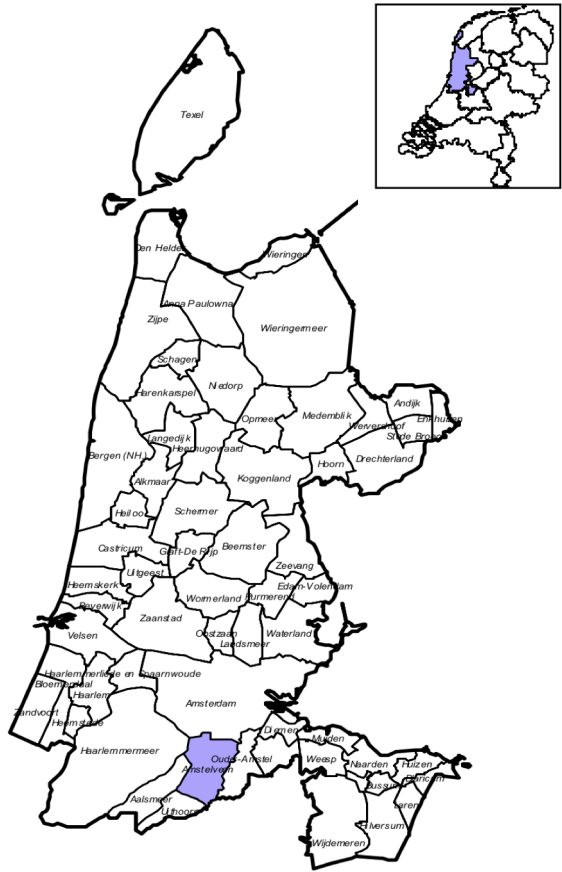
Figure 4-1 Map Amstelveen (CBS, 2011a)

the whole agglomeration of Amsterdam as well as Amstelveen (Amstelveenweb, 2015).

The total amount of Retail Floor Area (RFA) in Amstelveen is approximately 125,000 square meters, of which 50,000 square meters is covered by shopping mall

Table 4-1

Retail area composition of Stadshart (Amstelveen)

Vacant stores	1,224 m2	2%
Daily stores	5,073 m2	10%
Fashion & luxury stores	38,221 m2	75%
(Clothing & Fashion)	(14,119 m2)	(28%)
Other stores	6,354 m2	13%
Leisure / Restaurants	34	
Amount of branches	14	
Total objects	200	100%
Total RFA	50,872 m2	100%

Note. Adapted from Locatus (2015)

ATMOSPHERICS ON THE DOORSTEP

Stadshart and therefore it is classified as a large traditional shopping center. For more detailed information about the city Amstelveen see Appendix D.

Shopping mall: Stadshart Amstelveen

In the fifties, shops and flats were built alongside the Rembrandtweg and ten years later shopping center Het Binnenhof opened its doors as one of the first modern shopping centers in The Netherlands. In the seventies department store Vroom & Dreesmann opened next to the existing shops, as well as the cultural center. In the eighties Het Binnenhof was provided with a roof and became a closed shopping mall. The nineties were marked by the revitalization of the whole area and the different stores, shopping mall and department store had to become one big shopping area with a new name: Stadshart Amstelveen. The part where the stores of the Zara, WE Fashion and Esprit are located is owned by European commercial property company Unibail Rodamco (Gemeente Amstelveen, 2015b).

With its location next to the highway A9, Stadshart (Amstelveen) has a high accessibility by car and it has many parking garages around the center. With the public transport it can be reached by bus, metro or tramline from Schiphol Airport, Hoofddorp, Haarlem and also from the capital of The Netherlands: Amsterdam (Gemeente Amstelveen, 2015b).

As mentioned before Stadshart (Amstelveen) has 50,000 square meters RFA, which is about 40% of the total retail floor area of Amstelveen and provides

Figure 4-3 Map Stadshart Amstelveen (Locatus, 2015)

Figure 4-2 Impression Stadshart Amstelveen

shopping facilities for the whole agglomeration. In an average week the shopping mall has 166,800 visitors (Locatus, 2015). For a full overview of square meters RFA and percentages per store category see Table 4-1.

See Figure 4-2 and 4-3 for an impression of the mall. The shopping mall has a very modern appeal due to the striking size of shop windows, the discreet use of signage on the façade and the use of many white colors. The discreet use of greenery and the high amount of street furniture gives the shopping environment a luxurious feel. The low level of vacancy ratifies the good feeling a consumer may have when shopping in this mall. Although the shopping mall is 20 years old it feels brand new.

Store: Zara

Founded in 1975 Zara emerged to a global clothing company with 13.8 billion euros revenue in 2012 and a net profit of € 1.9 billion, despite global financial downturn. The empire of Zara extends to more than 5,500 stores in 82 countries. Under the name Inditex it has eight retail brands including Zara, Massimo Dutti, Bershka and Pull & Bear (Butler, 2012). For more history of Zara see Appendix E.

The Zara store in Stadshart (Amstelveen) in centrally located with a passerby-segment of A2 (20,000 – 30,000 weekly passers; Locatus, 2015). From all the nine investigated stores in this survey it has the largest RFA of 1325 square meters divided over two floors. Costumers can entre the store trough a relatively large entrance of almost four meters width. Inside, the floor, ceiling and walls are all white with brown wooden shelves, which gives a spacious feeling. The relatively wide aisles of 2.5 meter enhance this feeling. There is loud noise in de background, but all this cannot be seen or heard from the outside due to the fact that the view through the shopping window is blocked. See Figure 4-5 for an impression of the front of the Zara in Stadshart (Amstelveen).

Figure 4-4 Impression Zara Stadshart

Store: WE Fashion

Started in 1962 under the name 'Hij Herenmode' (He Menswear), WE Fashion operates in Europe with 240 stores in six countries and approximately 3,000 employees and it headquarters in Utrecht, The Netherlands (WE Fashion, 2015). For more history of WE Fashion see Appendix E.

The store of WE Fashion in Stadshart (Amstelveen) across the Zara, has 713 square meters divided over two floors. The store feels very open/transparent with white colors (walls, ceiling and shop window), a concrete floor and an open view through the shop window. The entrance is big (approx. 3.5 m), but because of the glass shop window with open view a costumer will get the feeling the entrance is as big as the store width (12 m). The store is very light due to a high amount of bright lights. The width of the aisles is small (just 1.5 m) and the routing through the store is simple with the stairs in the back. The store is located across the Zara on the same square, however the store is categorized with a B1 passers-by segment label (10,000 – 20,000 weekly

passers; Locatus, 2015). See Figure 4-4 for an impression of the front of the WE Fashion in Stadshart (Amstelveen).

Store: Esprit

Founded in San Francisco in 1968, Esprit is in 2015 present in over 40 countries with approximately 900 retail stores and more than 8,000 wholesale points of sale (Esprit, 2015). In 2012 it announced it would close all its stores in North America due to unprofitable business and a slump of 98 percent on its earnings the year before. Esprit also struggled in China, therefore it wants to focus on Europe where Esprit makes 79 percent of it sales (Chan & Coleman-Lochner, 2012). For more history of Esprit see Appendix E.

In Stadshart (Amstelveen) the store does not have a good spot on the routing through the shopping mall. It is located in a path with a lower ceiling and behind the general walkthrough towards the hall where Zara and WE are located. The store has a big entrance that is about 50 percent of the front of the shop; four meters of the total store width of nine meter. The store has a split-level (two stories) and a total of 440 square meters RFA. The floor, the ceiling and the wall are all white and the

lights are very bright. Just like the WE Fashion the shopping window is transparent and a consumer has a view through the window in the store. The window dressing is striking, but is discreet in its signage of the brand. See Figure 4-6 for an impression of the front of the Esprit in Stadshart (Amstelveen).

Figure 4-6 Impression Esprit Stadshart

Table 4-2

Overview of measurable characteristics in Stadshart (Amstelveen)

	Measurable characteristics	Zara	WE Fashion	Esprit
1	Composition of the ceiling	Contemporary	Contemporary	Contemporary
2	Color of ceiling	White	White	White
3	Composition of floor	Smooth	Rough	Smooth
4	Color of floor	Grey	Grey	White
5	Composition of wall	Contemporary	Contemporary	Contemporary
6	Color of wall	White	White	White
7	Store depth	18 m	20 m	20 m
8	Store size	1325 m2	713 m2	440 m2
9	Store width	18 m	12 m	9 m
10	Entrance size	3.5 m	3.5 m	4 m
11	Amount of stories	2	2	2
12	Store height	3 m	3 m	3.2 m
13	Music volume			
	On 12-09-2014	Hard	Low	Hard
	On 12-10-2014	Low	Low	None
14	Background noise			
	On 12-09-2014	Average	Low	Low
	On 12-10-2014	Average	Low	Low
15	Amount of light	Average	High	High
16	Color of light	Warm	Average	Warm
17	Temperature			
	On 12-09-2014	Warm	Average	Average
	On 12-10-2014	Average	Average	Average
18	View through shop window	Blocked	Open	Open
19	Window dressing	Neutral	Neutral	Striking
20	Dominant color in shop window	White	White	Blue
21	Size of shop window	Neutral	Striking	Discreet
22	Signage on façade	Neutral	Neutral	Discreet
23	Visibility of cash registers	Yes	Yes	Yes
24	Visibility of dressing rooms	Yes	No	Yes
25	Width of aisles	2.5 m	1.5 m	1.5 m
26	In-store furnishing	No	No	No
27	In-store greenery	No	No	No
28	Routing in store	Complex	Simple	Simple
29	Crowding			
	On 12-09-2014	Time bound	Quiet	Quiet
	On 12-10-2014	Average	Time bound	Time bound
30	Passers-by segment	A2	B1	B1

4.2 The city of Hoofddorp

Hoofddorp is a city just south of Amsterdam and west to Amstelveen. Hoofddorp has 73,275 inhabitants (January 1, 2010; CBS, 2011b) and the municipality consists of 22 villages with a total of circa 143,000 inhabitants. Spread over a total amount of 178 square kilometers this results in an average density (799 inhabitants per km2). In the two main cores of the municipality, Hoofddorp and Nieuw-Vennep, the density is above 6,000 inhabitants per square kilometer. Haarlemmermeer has 58,415 households and a low grey pressure (65 or older) of only 12%. The amount of foreigners is average with 10% western foreigners and 12% non-western foreigners compared to the national rate of 20.3% foreigners (CBS, 2011b).

Hoofddorp has 120,463 RFA of the total of 313,342 RFA in the whole municipality of Haarlemmermeer; the rest is scattered over the other 21 villages (Hoofddorp Winkelstad, 2015). For more detailed information about the city of Hoofddorp see Appendix D.

Figure 4-7 Map Haarlemmermeer (CBS, 2011b)

Shopping mall: Hoofddorp Winkelstad

Shopping center Vier Meren ('Four Lakes') was built in 2003 as part of Hoofddorp Winkelstad ('Shopping city'), the new city center of Hoofddorp. This city center has 220 stores and has circa 69,600 square meters of retail floor area. It has about 99,600 weekly visitors (Locatus, 2015). For a full overview of square meters RFA and percentages per store category see Table 4-3.

Table 4-3

Retail area composition of Hoofddorp Winkelstad

Vacant stores	7,340 m2	11%
Daily stores	10,945 m2	16%
Fashion & luxury stores	32,068 m2	47%
(Clothing & Fashion)	(19,814 m2)	(29%)
Other stores	18,184 m2	26%
Leisure / Restaurants	61	
Amount of branches	15	
Total objects	212	100%
Total RFA	68,537 m2	100%

Note. Adapted from Locatus (2015)

Figure 4-10 Map Hoofddorp Winkelstad (Locatus, 2015)

The part of Hoofddorp Winkelstad where the investigated stores are located in is called shopping center Vier Meren and owned by European commercial property company Wereldhave specialized in shopping centers in The Netherlands, Finland, Belgium and France. See Figure 4-8 and 4-9 for an impression of the mall. The very big public hall of Vier Meren gives this mall the most modern impression of the three malls investigated in this study. Even the high amount of the street furniture contributes with its design to the modern impression. The design of the mall is colorful and has a very high ceiling. The shopping mall is not as enclosed as it seems, but it actually has openings were the high ceiling meets the walls and connects the inner environment

Figure 4-8 Impression Vier Meren Hoofddorp

Figure 4-9 Impression WE Fashion Vier Meren

with the outer environment. Signage of store brands on the full-glass shopping windows is neutral and promotion is very discreet, this contributes to a high standard. These previous spacious, modern and colorful perceptions probably contribute to the fact that in this part (Vier Meren) has a low vacancy rate of 2.6%, while the whole shopping district Hoofddorp Winkelstad has a vacancy rate of 11% (Locatus, 2015).

Store: WE Fashion

The history of the WE is previously mentioned. The WE Fashion in Vier Meren has similarities to the one in Stadshart (Amstelveen). This store also has white colors, but a dark grey floor of tiles instead of light grey concrete. It has a bigger entrance of four meter to 3.5 meter in Stadshart (Amstelveen). However, this WE Fashion is smaller with only 390 square meters on one floor but is wider with 20 meters front, although the view through the shop window is semi-blocked. Only through the two entrances consumers can take a view inside. The store is very light with a high amount of light turned on. The width of the aisles is small (just 1.5 m) and the routing through the store is simple with cash registers in the back. The WE Fashion is in the middle of the mall on the big

Figure 4-12 Impression The Sting Vier Meren

public square and it is labeled with an A2 passers-by segment (20,000 – 30,000 weekly passers; Locatus, 2015). See Figure 4-10 for an impression of the WE Fashion in Hoofddorp Vier Meren.

Store: The Sting

The Sting opened its first store in 1982 and has approximately 60 of its 70 stores located in The Netherlands. The store focuses on young consumers and the store has many dark shades in design of the products and the store (Brabants Dagblad, 2013).

The Sting in Vier Meren has two entrances: one across the WE Fashion on the main square and one outside in a street, part of Hoofddorp Winkelstand. Remarkable is the store width of 31 meters with a total blocked view through the shop window, medium window dressing but only big banners and signage of the store brand and promotions. Inside The Sting its dark grey, there is a wooden floor and the amount of light is low. Everywhere in the big 860 square meter store there is loud music. The store has quite an illogical routing spread over the two stories. This store is the only store that has furniture in the form of some luxurious red couches. See Figure 4-12 for impressions of the store.

Figure 4-11 Impression Esprit Vier Meren

Store: Esprit

This Esprit is situated in the middle of the shopping mall Vier Meren on a corner and at a crossing of walking lanes where consumers pass to enter the Hoofddorp Winkelstad. Although the store is smaller than the one in Stadshart (only 330 square meters to 440 in Stadshart Amstelveen), this store is well located and has a very high ceiling of five meters high that makes it feel bigger and more spacious (Locatus, 2015). Other features of the store are the music that is hardly noticeable and the simple routing in the store with the cash registers in the back and aisles of an average width of 1.5 meter. The lights are very bright, the shopping window is transparent and a consumer has a view through the window in the store. The window dressing is neutral, as well as its signage of de brand. See Figure 4-11 for an impression of the Esprit in Hoofddorp Vier Meren.

Table 4-4

Overview of measurable characteristics in Vier Meren (Hoofddorp)

	Measurable characteristics	WE Fashion	Esprit	The Sting
1	Composition of the ceiling	Contemporary	Contemporary	Contemporary
2	Color of ceiling	White	White	White
3	Composition of floor	Smooth	Rough	Rough
4	Color of floor	Grey	Wood	Wood
5	Composition of the wall	Contemporary	Contemporary	Contemporary
6	Color of wall	White	Grey	Grey
7	Store depth	20 m	17 m	22 m
8	Store size	390 m2	330 m2	860 m2
9	Store width	20 m	33 m	31 m
10	Entrance size	4 m	2 m	1.5 m
11	Amount of stories	1	1	2
12	Store height	3 m	5 m	3 m
13	Music volume			
	On 12-03-2014	Low	Low	Hard
	On 12-04-2014	Hard	Low	Hard
14	Background noise			
	On 12-03-2014	Low	Average	Average
	On 12-04-2014	Low	Low	Low
15	Amount of light	High	High	Average
16	Color of light	Average	Warm	Warm
17	Temperature			
	On 12-09-2014	Warm	Average	Average
	On 12-10-2014	Average	Average	Average
18	View through shop window	Blocked	Open	Blocked
19	Window dressing	Striking	Neutral	Neutral
20	Dominant color in shop window	Red	White	Red
21	Size of shop window	Neutral	Striking	Neutral
22	Signage on façade	Neutral	Neutral	Striking
23	Visibility of cash registers	Yes	Yes	Yes
24	Visibility of dressing rooms	Yes	No	No
25	Width of aisles	1.5 m	1.5 m	1.5 m
26	In-store furnishing	No	No	Yes
27	In-store greenery	No	No	No
28	Routing in store	Simple	Simple	Simple
29	Crowding			
	On 12-03-2014	Time bound	Time bound	Average
	On 12-04-2014	Quiet	Quiet	Quiet
30	Passers-by segment	A2	A2	A2

4.3 The city of Rotterdam

Rotterdam is located in the west of The Netherlands at the river the Rotte. Rotterdam is a long stretched city of 86 neighborhoods, half of which are very industrialized and part of the harbor. The city has a total of 319 square kilometers land and the amount of inhabitants reduced to 593,049 on January 1, 2010 (CBS, 2011c). The city has a density of 2,903 inhabitants per square kilometer, which makes Rotterdam a very urbanized city. The grey pressure (older than 65) is 22.5%, which is close to the national average. Rotterdam counts approximately 300,000 households with an average size of 1.95, which is low compared to the national average of 2.22. The average worth of dwellings in Rotterdam is 161,000 euros, which is very low compared to the national average of 242,000 euros (CBS, 2011c). For more detailed (especially historical) information see Appendix D.

Rotterdam has over a 907,000 square meters of retail floor area spread over the city. It's a big city with a city center consisting of many shops (206,622 RFA). Rotterdam also has many street markets and several shopping malls. It is not
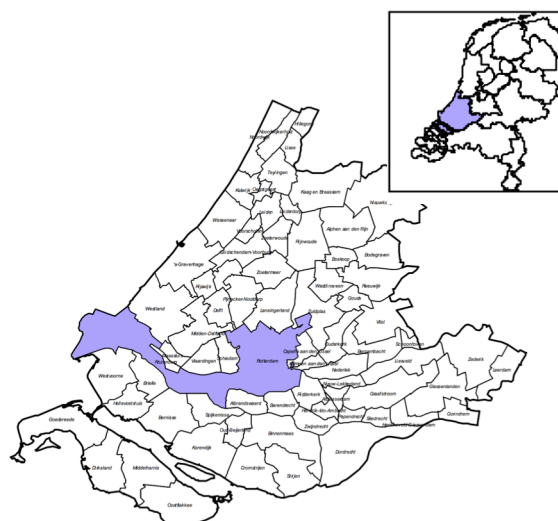

Figure 4-13 Map Rotterdam (CBS, 2011c)

surprising that with 86 neighborhoods Rotterdam counts more than 80 shopping locations. Rotterdam Alexandrium is one of its big(gest) malls with a total of 106,016 square meters RFA (Locatus, 2015). For a full overview of square meters RFA and percentages per store category see Table 4-5.

Shopping mall: Alexandrium Shopping Center

In 1984 shopping center Oosterhof was built in district Prins Alexander ('Prince Alexander'). In 1996 the shopping center was renamed into Alexandrium I and was expanded with Alexandrium II and III by

Table 4-5

Retail area composition of Alexandrium (Rotterdam)

Vacant stores	320 m2	1%
Daily stores	6,361 m2	21%
Fashion & luxury stores	19,782 m2	64%
(Clothing & Fashion)	(16,188 m2)	(53%)
Other stores	4,355 m2	14%
Leisure / Restaurants	24	
Amount of branches	14	
Total objects	110	100%
Total RFA	30,818 m2	100%

Note. Adapted from Locatus (2015)

real estate developer MAB. In 2001 it was expanded again, to create more parking space. Nowadays it is a thematic shopping location and bares the names Alexandrium Shopping Center, Alexandrium Megastores and Alexandrium Woonmall ('Living mall'). Architect De Architekten Cie designed the latest expansion. They made special circuits for transport, cars and pedestrians and gave it a very modern look. This mall must be seen as a very large traditional shopping center; it is above 80,000 square meters RFA (Gemeente Rotterdam, 2015b).

This research will only look at Alexandrium Shopping Center that counts circa 110 shops of a total of 31,300 square meters RFA. On a weekly basis 152,000 consumers visit this shopping center. There are more than enough parking facilities and it has its own railway station: Rotterdam Alexander (Locatus, 2015).

See Figure 4-14 and 4-16 for an impression of the mall. The shopping center has a very modern look from the outside, but the shopping area itself feels older. The shops do not have high full-glass shop windows. The streets are a bit cramped and full of advertisement signage. Big public squares

Figure 4-16 Map Alexandrium Rotterdam (Locatus, 2015)

are missing, especially when the shopping mall is compared to the other two parts of Alexandrium where there is a more modern feeling and a lot of street furniture and big-size open areas. For many inhabitants of Rotterdam this mall is a very know shopping district and by Locatus (2015) marked as an A1 shopping area, which is the highest label concerning weekly visitors (30,000 – 40,000 weekly passers). That's probably one of the reasons way there is almost no vacancy (less than 1%).

Store: Zara

The Zara in Alexandrium has a very prominent position in the routing through the shopping mall. Walking from the south in the direction of the railway station its

Figure 4-15 Impression Zara Alexandrium

Figure 4-17 Impression The Sting Alexandrium

Figure 4-18 Impression Esprit Alexandrium

right in front, but the passers-by segment is still A2 (20,000 – 30,000 weekly passers; Locatus, 2015). This Zara is also big with 1145 square meters divided over two floors. All the colors used in the store are white and there is bright light that enhances the brightness of the store. The music in the store is very loud. The shop window is discreetly dressed and the view through the window is just like the other Zara store in Stadshart (Amstelveen); blocked. The routing through the store is complex due to the two stories and the illogical placement of the escalator and the elevator. See Figure 4-15 for an impression of the Zara in Alexandrium.

Store: The Sting

The Sting in Alexandrium is a huge store on one level with 1049 square meters. It feels enormous because of its 50-meter store depth. Of all nine stores this is the only store that is historically/traditionally decorated by wainscoted walls and ceilings. The Sting has a big entrance of four meters wide. View through the shop windows is blocked, this makes the entrance stand out so. As in all stores of The Sting the music is very loud and the signage on the shop window is striking. The Sting is located on a T-junction of

walking lanes one of which is leading to the railway station. This makes the location a good spot to attract consumers. The Sting is labeled A2 in terms of passers-by (20,000 – 30,000 weekly passers; Locatus, 2015). See Figure 4-17 for an impression of The Sting in Alexandrium.

Store: Esprit

The Esprit in Alexandrium is small with only 418 squared meters, compared to the other two stores in this shopping center. The floor is made of wood, but the ceiling and wall are white and the lights are bright. Because of the total glass shop window with a non-blocked view the store is very bright and light, something the Esprit also tries to achieve with their other shops in the two other malls. The passer-by segment for this store is A2 (20,000 – 30,000 weekly passers; Locatus, 2015), but the observed amount of consumers entering the store is low. Interestingly the music volume varies from very loud to very low on different days. See Figure 4-18 for an impression of the Esprit in Alexandrium.

4.4 Conclusion

This chapter described the cities, survey locations (shopping malls) and the stores

selected in the survey locations. The cities Rotterdam, Amstelveen and Hoofddorp have some big differences in amount of inhabitants. E.g. Amstelveen counts around 80,000 inhabitants and has about 125,000 square meters RFA; the city of Hoofddorp is comparable and counts around 73,000 inhabitants and has 120,000 RFA; but Rotterdam is much bigger with approximately 593,000 inhabitants and 907,000 square meters.

This research studies the atmospherics of stores and explores the selected store characteristics. Non-selected variables have to be as equal as possible. This means that the shopping malls have to be comparable and their characteristics should not vary. The selected shopping malls are Stadshart (Amstelveen), Vier Meren (Hoofddorp), Alexandrium (Rotterdam) and they do not vary much on the scale of RFA, vacancy rate and store categorical spread. Stadshart compels around 50,000 square meters RFA, has a vacancy rate of 2% and *Fashion & luxury stores* possess 75% of the total RFA. Hoofddorp Winkelstad has approximately 68,000 square meters RFA and 47% is *Fashion & luxury*. The part: Vier Meren (Hoofddorp), where the selected stores are located, has a vacancy rate of 2.6%. Shopping Center Alexandrium has around 31,000 square meters, 64% is *Fashion & luxury* and the vacancy rate is 1%.

In each shopping mall three stores are selected in the subcategory *Clothing & fashion (*category *Fashion & luxury)*. It is assumed that they are comparable on the level of branding, attractive power and have enough variation in the selected store characteristics in order to perform analyses on the stores.

Table 4-6

Overview of measurable characteristics in Alexandrium (Rotterdam)

	Measurable characteristics	Esprit	Zara	The Sting
1	Composition of the ceiling	Contemporary	Contemporary	Traditional
2	Color of ceiling	White	White	White
3	Composition of floor	Rough	Smooth	Rough
4	Color of floor	Wood	Beige	Wood
5	Composition of the wall	Contemporary	Contemporary	Traditional
6	Color of wall	White	White	White
7	Store depth	30 m	22 m	50 m
8	Store size	418 m2	1145 m2	1049 m2
9	Store width	18 m	30 m	20 m
10	Entrance size	3.2 m	3.3 m	4 m
11	Amount of stories	1	2	1
12	Store height	3.3 m	3 m	3.3 m
13	Music volume			
	On 11-16-2014	Low	Hard	Hard
	On 12-17-2014	Hard	Hard	Hard
14	Background noise			
	On 12-16-2014	Low	Average	Average
	On 12-17-2014	Average	Low	Average
15	Amount of light	High	High	High
16	Color of light	Average	Average	Warm
17	Temperature			
	On 12-16-2014	Warm	Average	Average
	On 12-17-2014	Average	Warm	Average
18	View through shop window	Open	Blocked	Blocked
19	Window dressing	Striking	Discreet	Striking
20	Dominant color in shop window	Grey	Grey	Green
21	Size of shop window	Neutral	Striking	Neutral
22	Signage on façade	Neutral	Neutral	Striking
23	Visibility of cash registers	Yes	Yes	Yes
24	Visibility of dressing rooms	No	No	No
25	Width of aisles	2 m	2 m	2 m
26	In-store furnishing	No	No	No
27	In-store greenery	No	No	No
28	Routing in store	Simple	Complex	Simple
29	Crowding			
	On 12-03-2014	Quiet	Time bound	Time bound
	On 12-04-2014	Quiet	Average	Average
30	Passers-by segment	A2	A2	A2

5   Description of the collected data

This chapter describes the characteristics of the respondents. General characteristics such as gender, age, work status, shopping behavior etc. are obtained and will be presented for each shopping mall. In this way insight will be gained in the participants of the survey. A response and non-response analysis has not been made, because it was not seen as added value.

5.1 Respondents

Clearly, the percentage of female shoppers is much higher than male shoppers in all three of shopping malls (see Table 5-1). There could be a few reasons for this big difference. First, in the case of mixed groups, women might be more willing to participate with the survey because they might have more affinity with shopping. Secondly, from the approached consumers women might be more willing to fill in a

Table 5-1

Gender, generational cohorts, educational attainment and work status

	Alexandrium		Vier Meren		Stadshart	
	%	No.	*%*	No.	*%*	No.
Gender						
Male	15.6%	14	17.9%	15	7.9&	7
Female	84.4%	76	82.1%	69	91.1%	82
Total	100.0%	90	100.0%	84	100.0%	89
Generational cohorts						
Builder gen (age 70-95)	3.3%	3	6.0%	5	9.0%	8
Baby boomers (age 51-69)	23.3%	21	26.2%	22	32.6%	29
Generation X (age 40-50)	20.0%	18	23.8%	20	18.0%	16
Generation Y (age 21-39)	37.8%	34	35.7%	30	22.5%	20
Generation Z (age 0-20)	15.6%	14	8.3%	7	18.0%	16
Total	100.0%	90	100.0%	84	100.0%	89
Education attainment						
Lower secondary education	10.0%	9	9.5%	8	7.9%	7
Upper secondary education	52.2%	47	44.0%	37	48.3%	43
Bachelor/Master (Tertiary education)	37.8%	34	46.4%	39	43.8%	39
Total	100.0%	90	100.0%	84	100.0%	89
Work status						
Student	25.6%	23	11.9%	10	20.2%	18
Employed (<32 hours/week)	22.2%	20	34.5%	29	19.1%	17
Employed (>32 hours/week)	40.0%	36	34.5%	29	25.8%	23
Unemployed	3.3%	3	6.0%	5	13.5%	12
Retired	8.9%	8	13.1%	11	21.3%	19
Total	100.0%	90	100.0%	84	100.0%	89

Note. The education level is based on the levels used by the Dutch governmental institutions CBS and RIVM and on the international comparable levels of education by UNESCO. Adapted from Verweij (2014) and UIS (2011). In The Netherlands *Lower secondary education* includes lbo, mavo, vmbo, mbo-1 and avo-onderbouw; *Upper secondary education* includes havo, vwo and mbo-2-4 and *Bachelor/Master/Tertiary education* includes hbo and wo. Adapted from Appendix G.

questionnaire. But mainly: there are more women shopping.

Concerning age classification, generational cohorts are used (explained in §2.3) since respondents within such a category have more in common. In shopping mall Vier Meren and Alexandrium *Generation Y* is the category that is most represented. Shopping mall Stadshart in Amstelveen is most represented by the *Baby boomers*. Results are not surprising since the grey pressure in Amstelveen is also the highest of the three cities.

Noteworthy differences are not seen when it concerns the educational attainment of the respondents between the three shopping malls. However, the work statuses of the respondents differ between the shopping malls. In Vier Meren, compared to Alexandrium and Stadshart, the number of students is relatively small. This is not surprising because of the many universities and colleges in Rotterdam and Amsterdam (close to Amstelveen). The most fulltime working (*Employed > 32 hours/week*) respondents and the least unemployed respondents are found in Shopping mall Alexandrium.

Table 5-2

Store visit frequency, impulsive behavior and motivational orientation

	Alexandrium		Vier Meren		Stadshart	
	%	No.	%	No.	%	No.
Store visit frequency						
1-2 per year	27.3%	24	28.9%	24	26.1%	23
3-4 per year	14.8%	13	15.7%	13	11.4%	10
5-10 per year	6.8%	6	8.4%	7	11.4%	10
11-15 per year	20.5%	18	27.7%	23	15.9%	14
16-49 per year	19.3%	17	13.3%	11	20.5%	18
50 or more per year	11.4%	10	6.0%	5	14.8%	13
Total	100.0%	88	100.0%	83	100.0%	88
Impulse shopping						
Impulsive behavior	58.9%	53	71.4%	60	55.1%	49
Non-impulsive behavior	41.1%	37	28.6%	24	44.9%	40
Total	100.0%	90	100.0%	84	100.0%	89
Shopping motivation						
Hedonic motivation	34.4%	31	21.4%	18	28.1%	25
Utilitarian motivation	32.2%	29	48.8%	41	36.0%	32
Both	33.3%	30	29.8%	25	36.0%	32
Total	100.0%	90	100.0%	84	100.0%	89
Group composition						
Single woman	52.2%	47	51.2%	43	64.0%	57
Group of women	23.3%	21	19.0%	16	16.9%	15
Single man	3.3%	3	6.0%	5	1.1%	7
Group of men	4.4%	4	2.4%	2	1.1%	1
Mixed group	16.7%	15	21.4%	18	16.9%	15
Total	100.0%	90	100.0%	84	100.0%	89

Note. Adapted from Appendix G.

As said before, the grey pressure in the city Amstelveen is the highest with 31.3%, this also explains the high percentage of retired respondents in this city.

Respondents were asked to estimate their visits of the shop they just visited. In Table 5-2 no big differences were spotted. Respondents were also asked when they decided to enter the store they just visited: *At home* (1), *Earlier during shopping* (2) or when they *Passed the store* (3). Answer 3 was qualified as *Impulsive behavior*; 1 and 2 was a decision before actually seeing the store and the behavior of entering the store was qualified *Non-impulsive*. Regarding the results, respondents in shopping mall Vier Meren entered the store more on impulse (71.4%) comparing to respondents in the other two malls (58.9% and 55.1%). On the other hand the consumers of the Vier Meren shop more utilitarian (48.8%) compared to the respondents of the other two malls (36.0% and 32.2%). This is unexpected, more logical would be that hedonic consumers would behave more impulsively since they are shopping more on emotion. In this case the opposite occurs. Regarding group composition, there are no big outliers except that there are a little more single women shopping in shopping mall Stadshart.

5.2 Conclusion

This chapter described the respondents participating in the research. Women are representing the majority of the respondents with percentages above 80% in all three shopping malls. The demographic figures of the three cities (see Chapter 4) are explanatory for the higher amount of respondents from the older generations in shopping mall Stadshart. This also explains the higher amount of retired respondents in Stadshart (Amstelveen). Remarkable is the higher amount of respondents with impulsive behavior in combination with the higher amount of utilitarian respondents in shopping mall Vier Meren.

6 Data analysis

This chapter describes the results of the analyses described in Paragraph 3.5. For clarity, the procedure of the four analyses will be repeated shortly.

Analysis [1A]
This analysis will be done in order to find the strongest predictors in predicting the overall appreciation of a store among the fourteen store characteristic constructs. For this analyses an ordinal regression will be used.

Analysis [1B]
The literature review suggests in Paragraph 2.2 (Table 2-4) that the seven disaggregated atmospheric constructs are represented by the construct *Atmosphere*. That is why chosen is to do a second ordinal regression without these atmospheric constructs in order to compare the different outcomes.

Analysis [2]
In order to find the strongest predictors for the construct *Atmosphere* another ordinal

regression was done where the seven atmospheric constructs acted as independent variables.

Analysis [3]
In order to find consumer preferences of the 30 measurable characteristics, two types of analyses are used. Ordinal regressions with each construct as dependent variable and belonging clusters of measurable characteristics acting as independent variables.

Analysis [4]
The other type for finding consumers preferences is an analysis with a multinomial logit (MNL) model. These analyses are also performed with each construct acting as dependent variable and corresponding clusters of measurable characteristics acting as independent variables.

For reasons of clarity Figure 3-2 (§3.5) is repeated in Figure 6-1 where the procedures are visually reproduced.

Analysis [1A]:	Ordinal regression with 14 constructs (incl. atmospheric constucts)
Analysis [1B]:	Ordinal regression with 7 constructs (no atmospheric constructs)
Analysis [2]:	Ordinal regression (*Atmosphere* as dependent variable)
Analysis [3]:	Ordinal regression with 30 measurable characteristics
Analysis [4]:	Multinomial logit model with 30 measurable characteristics

[3] & [4]   [2]   [1A] & [1B]

30 measured characteristics — Appreciation of 14 constructs — Overall appreciation of the store
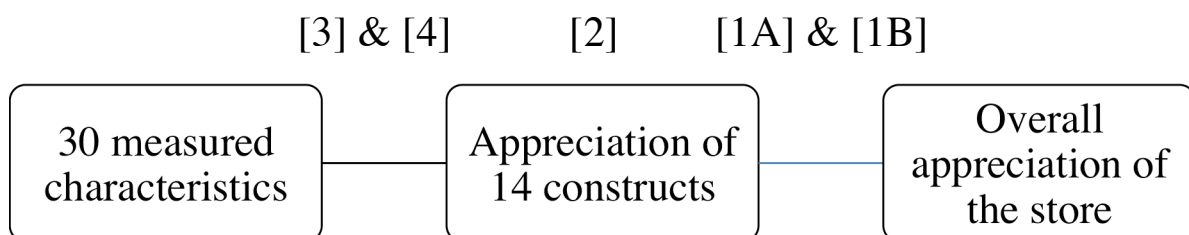
Figure 6-1 Overview of analyses

6.1 Overview of means

Table 6-1 shows the mean scores of each store characteristic construct for each of the nine stores where the survey was held. In survey questions 7.1 to 7.14 respondents rated the constructs on a 5-point Likert scale and in 7.15 they rated the store as a whole. The scale varies from *very negative* (value 1) to *very positive* (value 5). The green numbers show the best respondent' rating per construct. This table provides a number of interesting initial statements about the nine survey locations. For a full overview of these mean score statistics of constructs see Appendix H.

The scores of the means show that The Sting in Alexandrium (Rotterdam) has the most highest ratings with seven of the fourteen constructs compared to the other stores in the shopping mall. In shopping mall Vier Meren (Hoofddorp) the Esprit has the most highest ratings compared to the other stores with eight constructs and

also highest rated for its overall appreciation. The Zara in Stadshart (Amstelveen) has a few more highest ratings than the WE with highest ratings on eight constructs of the fourteen. Noteworthy is that both the Esprit in Stadshart as the WE in Vier Meren never scores best in its shopping mall on even one construct. However, it should be taken into account that some constructs might be more important for the consumer than other constructs. This shall be further examined in the following paragraphs. Therefore, conclusions based on the overview of means are inconclusive.

6.2 Ordinal regression with characteristic constructs

Analysis [1A]
Ordinal regression
Dependent variable: overall appreciation of the store
Independent variables: appreciations of the fourteen constructs

Table 6-1

Mean scores of constructs

	Alexandrium				Vier Meren		Stadshart		
	Esprit	Zara	Sting	WE	Esprit	Sting	Esprit	Zara	WE
7.1 Assortment	3.55	**4.00**	3.86	3.36	3.59	**3.68**	3.33	**4.13**	3.50
7.2 Price	3.48	3.38	**3.86**	3.26	3.63	**3.82**	3.52	**3.57**	3.48
7.3 Location	3.82	3.97	**4.07**	3.30	4.00	**4.07**	3.32	**4.10**	4.07
7.4 Interior	3.63	3.76	**3.90**	3.61	**3.88**	3.43	3.44	3.73	**3.79**
7.5 Space aspect	3.90	3.37	**4.03**	3.38	**3.70**	3.61	3.00	**3.90**	3.68
7.6 Atmosphere	3.47	3.48	**3.93**	3.07	3.67	**3.79**	3.21	**3.73**	3.57
7.7 Music	2.96	3.00	**3.70**	2.63	3.23	3.64	3.00	3.30	**3.38**
7.8 Light	3.60	3.40	**3.82**	3.41	**3.52**	3.30	3.52	3.40	**3.78**
7.9 Temperature	**3.45**	3.00	3.37	3.42	**3.63**	3.61	3.27	3.14	**3.63**
7.10 Service	**3.63**	2.93	3.59	3.25	**4.04**	3.43	3.52	3.23	**3.58**
7.11 Window	3.61	**3.87**	3.86	3.44	3.74	**2.75**	3.14	**4.07**	3.26
7.12 Layout	**3.97**	3.63	3.76	3.41	**3.77**	3.29	3.26	**3.60**	3.59
7.13 Image	3.87	**4.03**	3.82	3.18	**3.78**	3.43	3.56	**4.10**	3.39
7.14 Crowding	**3.83**	3.48	3.62	2.96	**3.63**	3.30	3.21	3.13	**3.52**
7.15 Total appr.	3.7	**4.07**	3.97	3.46	**4.04**	3.79	3.36	**3.93**	3.86

Note. Adapted from Appendix H.

This subparagraph tries to find the strongest predictors in predicting the overall appreciation of a store among the fourteen store characteristic constructs (including the disaggregated atmospheric constructs; discussed in §2.2). It is decided to perform an ordinal regression in order to find the constructs that matter and what their strengths are. As dependent variable the score of the *Appreciation of the whole store* is used (survey question 7.15). As independent variables the scores of the fourteen constructs are used (survey questions 7.1 till 7.14). Appreciations for the constructs and the store as a whole were given on a 5-point Likert scale. Due to the fact that the *Estimates* showed illogical ordinal relation because of low cell counts (Appendix J), the scores of all constructs (7.1 till 7.14) and the scores of the whole store (7.15) were recoded from a 5-point Likert scale into a 3-point Likert scale from *negative* (1 and 2 becomes 1), *neutral* (3 becomes 2) to *positive* (4 and 5 becomes 3).

The test of increase in log-likelihood is done and LL(0) differs from LL(β). Also the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 has a high significance (sig. = 0.000). H_0 is rejected. H_0: the model without the predictors is as good as the model with the predictors.

If the model fits well, the observed and expected cell counts are similar and the observed significance level is large for the Pearson and Deviance goodness-of-fit statistics (H_0 = model fits). This analysis meets this condition.

With the ordinal regression procedure the level of prediction can be found. Also the strength of the association between the dependent variable and independent variables is measured with the R-Squares of Cox & Schnell, Nagelkerke or McFadden. Their outcome lies between 0 and 1. A high R-Square indicates that the model has a high prediction value.

The appreciations of the fourteen constructs in the output with a significance lower than 0.05 were deleted (sig. > 0.05). This resulted in a combination of five predictor variables. Their *Estimates* are visually reproduced in Figure 6-2. All three R-Squares are higher than 0.2: the Nagelkerke R-Square is 0.572, the Cox & Snell is 0.411 and the McFadden 0.417, which indicates a high level of prediction. The strongest predictor according to analysis (strongest β-coefficient) is *Product assortment*, followed by *Image*, *Location of the store*, *Shop window* and *Temperature* (in this order). For the detailed output of the analysis see Appendix K. Clearly, a store is most valued by the constructs that resulted in this analysis. Not unexpected is *Product assortment* a strong predictor, if only because that is what actually will be bought in a store. Contrary to the literature review, the construct *Atmosphere* does not show significance in this model.

Analysis [1B]
Ordinal regression
Dependent variable: overall appreciation of the store
Independent variables: appreciation of seven constructs (without atmospheric constructs)

Product assortment

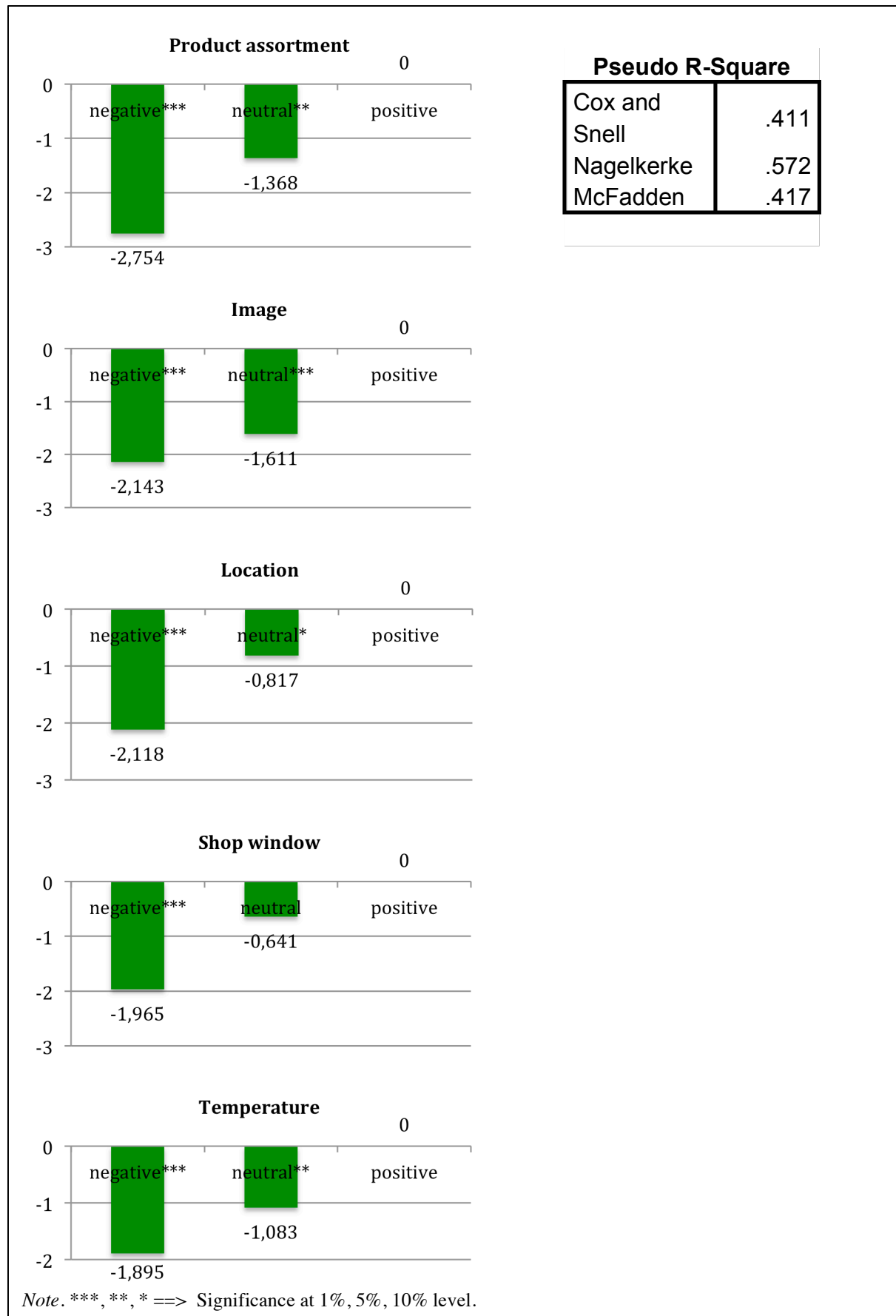| Pseudo R-Square	
Cox and Snell	.411
Nagelkerke	.572
McFadden	.417

Image

Location

Shop window

Temperature

Note. ***, **, * ==> Significance at 1%, 5%, 10% level.

Figure 6-2 SPSS ordinal regression Store characteristic constructs

In the literature review is presumed that atmospheric constructs are represented by the characteristic construct *Atmosphere* (survey question 7.6). In order to exclude the possibility that atmospheric constructs are weighed double within the construct *Atmosphere*, the same analysis was done without the seven atmospheric constructs. This means that the dependent variable is still the score of the *Appreciation of the whole store* (survey question 7.15) and for the independent variables only the scores of survey questions 7.1, 7.2, 7.3, 7.5, 7.6, 7.10 and 7.13 were used. Also, the characteristic constructs are analyzed without disturbance of disaggregated constructs. Due to the fact that the *Estimates* showed illogical ordinal relation because of low cell counts (Appendix L), the scores of the constructs and the scores of the whole store were recoded from a 5-point Likert scale into a 3-point Likert scale from *negative* (1 and 2 becomes 1), *neutral* (3 becomes 2) to *positive* (4 and 5 becomes 3).

The test of increase in log-likelihood is done and LL(0) differs from LL(β). Also the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 has a high significance (sig. = 0.000). H_0 is rejected. H_0: the model without the predictors is as good as the model with the predictors.

If the model fits well, the observed and expected cell counts are similar and the observed significance level is large for the Pearson and Deviance goodness-of-fit statistics (H_0 = model fits). This analysis meets this condition.

With the ordinal regression procedure the level of prediction can be found. Also the strength of the association between the dependent variable and independent variables is measured with the R-Squares of Cox & Schnell, Nagelkerke or McFadden.

The appreciations of the seven constructs in the output with a significance lower than 0.05 were deleted (sig. > 0.05). This resulted in a combination of four predictor variables. Their *Estimates* are visually reproduced in Figure 6-3. All three R-Squares are higher than 0.2: the Nagelkerke R-Square is 0.576, the Cox & Snell is 0.425 and the McFadden 0.413, which indicates a high level of prediction. Again *Products assortment* and *Image* are the strongest predictors (strongest β-coefficient). The rankings of the third and fourth predictors are a little different in this model: *Store atmosphere* and *Personnel & service* (in this order). For the detailed output of the analysis see Appendix M. The fact that *Store atmosphere* has an effect with a high significance level indicates that atmospheric constructs indeed might be double weighed and disturbs the model in Analysis [1A].

Analysis [2]
Ordinal regression
Dependent variable: appreciation of the construct Store atmosphere.
Independent variables: appreciation of the seven atmospheric constructs.

Next step is analyzing the prediction of the *Store atmosphere* by the atmospheric constructs. The appreciation of *Store atmosphere* act as dependent variable and the atmospheric constructs act as independent variables. According to the
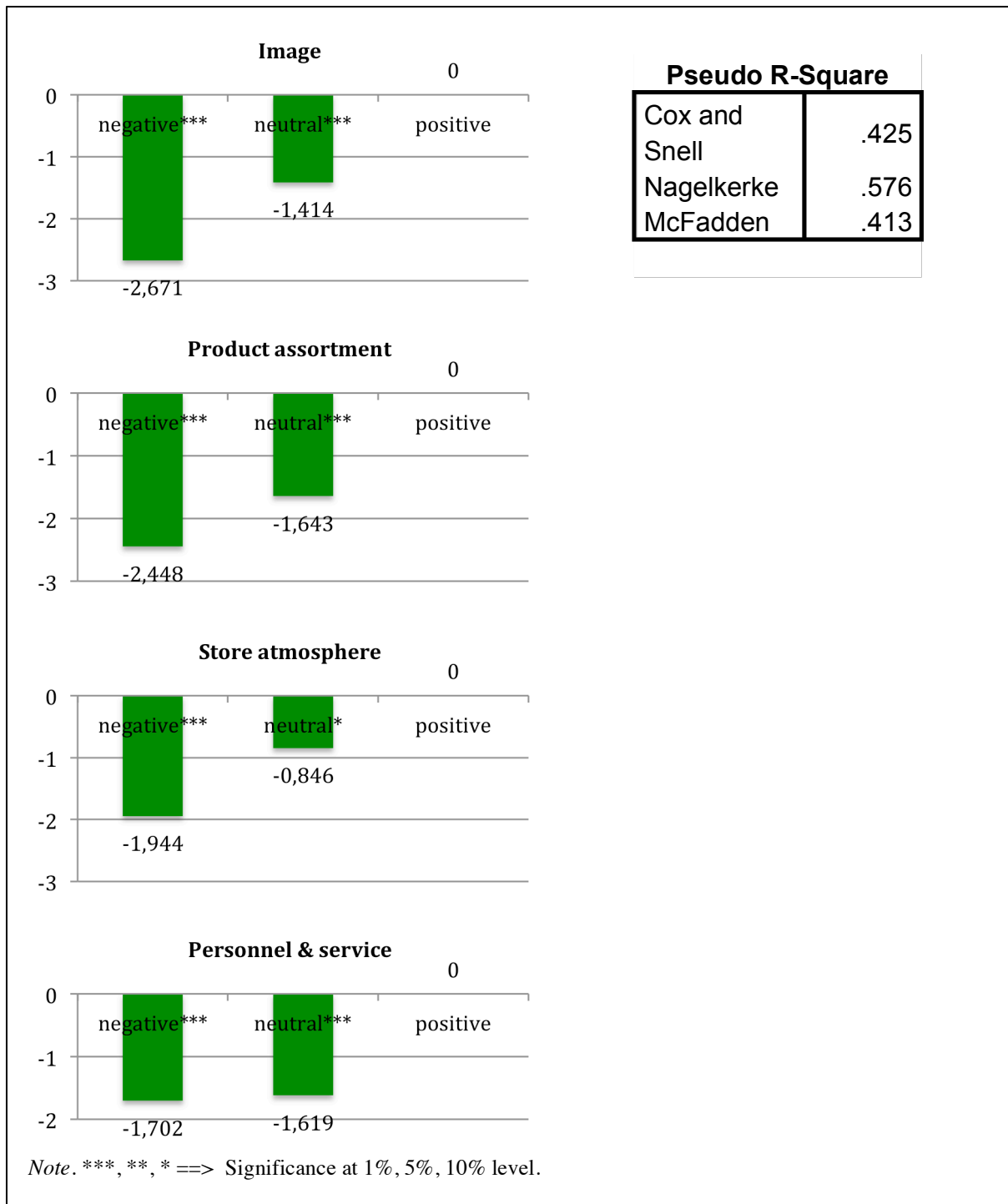
Figure 6-3 SPSS ordinal regression Store characteristic constructs (without atmospheric constructs)

literature review these are *Interior design* (7.4), *Music* (7.7), *Light* (7.8), *Temperature* (7.9), *Shop window* (7.11), *Layout* (7.12) and *Crowding* (7.14) (see §2.2). Due to the fact that the *Estimates* showed illogical ordinal relation because of low cell counts (Appendix N), the scores of the atmospheric constructs and the scores of the *Store atmosphere* were recoded from a 5-point Likert scale into a 3-point Likert scale from *negative* (1), *neutral* (2) to *positive* (3).

The test of increase in log-likelihood is done and LL(0) differs from LL(β). Also the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 has a high significance (sig. = 0.000). H_0 is rejected. H_0: the model without the predictors is as good as the model with the predictors.

If the model fits well, the observed and expected cell counts are similar and the observed significance level is large for the Pearson and Deviance goodness-of-fit statistics (H_0 = model fits). This analysis does not have a large significance level for the Pearson and Deviance goodness-of-fit statistics. This model does not fit and parameters should not be interpreted. For the detailed output of the analysis see Appendix O.

6.3 Ordinal regression with measurable characteristics

Analysis [3]
<u>*Ordinal regressions*</u>
Dependent variables: characteristic constructs.
Independent variables: cluster of measurable characteristics.

The set of measurable characteristics in Appendix F all contribute to constructs questioned for appreciation in the survey with question 7.1-7.14. In order to measure which characteristics have the most influence on the constructs, ordinal regressions were done per construct and its corresponding cluster of measurable characteristics. Not all constructs had measurable characteristics, so not all constructs could be analyzed. For clear overview of the clusters in this analysis see Table 6-2. Before performing the ordinal regressions correlation matrices were made of each cluster of measurable characteristics. When characteristics within the cluster correlated, the characteristics with the highest correlation were excluded from the analysis. Three measurable characteristics were excluded because they were constant. These were *Color of ceiling* (2), *Visibility of cash registers* (23) and *In-store greenery* (27). Two measurable characteristics were combined, because they correlated 100% and shared the same values. These were *Composition of the ceiling* (1) and *Composition of the wall* (5).

Location of the store (7.3)
In this model *Location of the store* (7.3) acts as dependent variable and characteristic *Passers-by segment* (30) as independent variable.
The test of increase in log-likelihood is done and LL(0) does not differ much from LL(β). Also the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 is not significant (sig. = 0.933). H_0 is accepted. H_0: the model without the predictors is as good as the model with the predictors. Parameters should not be interpreted. For the detailed output of the analysis see Appendix P.

Constructs and measurable characteristics

Dependent variable: Store characteristic construct	Independent variables: Cluster of measurable characteristics
7.1 Product assortment	No characteristics measured
7.2 Price of products	No characteristics measured
7.3 Location of the store in mall	30. Passers-by segment
7.4 Interior design of the store	1. Composition of the ceiling & wall (combined with 5)
	2. Color of ceiling
	3. Composition of floor
	4. Color of floor
	5. Composition of wall
	6. Color of wall
7.5 Space aspects of the store	7. Store depth
	8. Store size
	9. Store width
	10. Entrance size
	11. Amount of stories
	12. Store height
7.6 Store atmosphere	Predicted by 7.11; 7.8; 7.4; 7.7 and 7.9
7.7 Music in the store	13. Music volume
	14. Background noise
7.8 Light in the store	15. Amount of light
	16. Color of light
7.9 Temperature in the store	17. Temperature
7.10 Personnel and service	No characteristics measured
7.11 Shop window	18. View through shop window
	19. Window dressing
	20. Dominant color in shop window
	21. Size of shop window
	22. Signage on façade
7.12 Layout of store	23. Visibility of cash registers
	24. Visibility of dressing rooms
	25. Width of aisles
	26. In-store furnishing
	27. In-store greenery
	28. Routing in store
7.13 Image of the store	No characteristics measured
7.14 Crowding	29. Crowding in store
7.15 Overall appreciation store	Predicted by all constructs

Interior design of the store (7.4)

In this model *Interior design* (7.4) acts as dependent variable and characteristics *Composition of ceiling and wall* (1), *Composition of floor* (3), *Color of floor* (4) and *Color of wall* (6) as independent variables.

The test of increase in log-likelihood is done and LL(0) differs from LL(β). But the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 is not significant (sig. = 0.244). H_0 is accepted. H_0: the model without the predictors is as good as the model with the predictors. Parameters should not be interpreted. For the detailed output of the analysis see Appendix R.

Space aspects of the store (7.5)

In this model *Space aspects* (7.5) acts as dependent variable and characteristics *Store depth* (7), *Store size* (8), *Store width*

(9), *Entrance size* (10), *Amount of stories* (11) and *Store height* (12) as independent variables.

The test of increase in log-likelihood is done and LL(0) differs from LL(β). Also the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 has a high significance (sig. = 0.000). H_0 is rejected. H_0: the model without the predictors is as good as the model with the predictors.

If the model fits well, the observed and expected cell counts are similar and the observed significance level is large for the Pearson and Deviance goodness-of-fit statistics (H_0 = model fits). This analysis meets this condition.

With the ordinal regression procedure the level of prediction can be found. Also the strength of the association between the
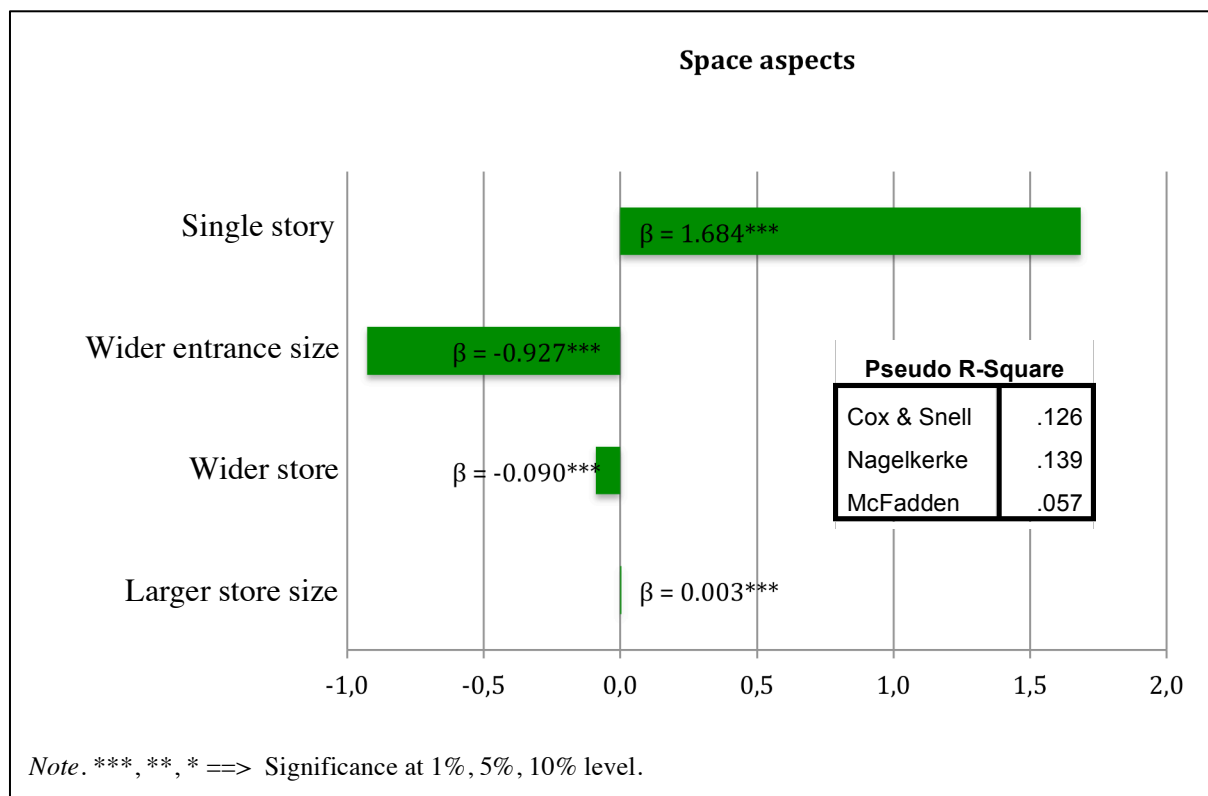

Figure 6-4 SPSS ordinal regression Space aspects of the store (7.5)

dependent variable and independent variables is measured with the R-Squares of Cox & Schnell, Nagelkerke or McFadden.

The independent variables in the output with a significance lower than 0.05 were deleted (sig. > 0.05). This resulted in a combination of four predictor variables. Their *Estimates* are visually reproduced in Figure 6-4. Two R-Squares are higher than 0.1: the Nagelkerke R-Square is 0.139 and the Cox & Snell is 0.126, which is low but reasonable. Characteristic *Amount of stories* (11) is the strongest predictor and has a positive effect on the appreciation of the store's *Space aspects* when the store has one story. Characteristic *Entrance size* (10) has a negative effect on the appreciation of *Space aspects* when the entrance is wider (on a scale from 1.5 to 4 meter). The other two characteristics *Store size* (8) and *Store width* (8) have very low *Estimates*, which means they have almost no effect. For the detailed output of the analysis see Appendix T.

Music in the store (7.7)
In this model *Music in the store* (7.7) acts as dependent variable and characteristics *Music volume* (13) and *Background noise* (14) as independent variables.

The test of increase in log-likelihood is done and LL(0) does not differ much from LL(β). Also the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 is not significant (sig. = 0.089). H_0 is accepted. H_0: the model without the predictors is as good as the model with the predictors.

This analysis also does not have a large significance level for the Pearson and Deviance goodness-of-fit statistics. This model does not fit and parameters should not be interpreted. For the detailed output of the analysis see Appendix V.

Light in the store (7.8)
In this model *Light in the store* (7.8) acts as dependent variable and characteristics *Amount of light* (15) and *Color of light* (16) as independent variables.

The test of increase in log-likelihood is done and LL(0) does not differ much from LL(β). Also the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 is not significant (sig. = 0.099). H_0 is accepted. H_0: the model without the predictors is as good as the model with the predictors.

This analysis also does not have a large significance level for the Pearson and Deviance goodness-of-fit statistics (sig. = 0.000). This model does not fit and parameters should not be interpreted. For the detailed output of the analysis see Appendix X.

Temperature in the store (7.9)
In this model *Temperature in the store* (7.9) acts as dependent variable and characteristic *Temperature* (17) as independent variable.

The test of increase in log-likelihood is done and LL(0) differs from LL(β). Also the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 has a high significance (sig. = 0.025). H_0 is rejected. H_0: the model without the predictors is as good as the model with the predictors.

If the model fits well, the observed and expected cell counts are similar and the observed significance level is large for the Pearson and Deviance goodness-of-fit statistics (H_0 = model fits). This analysis meets this condition.

With the ordinal regression procedure the level of prediction can be found. Also the strength of the association between the dependent variable and independent variables is measured with the R-Squares of Cox & Schnell, Nagelkerke or McFadden. All R-Squares for this model are lower than 0.032, which is low. Results should better not be interpreted. For the detailed output of the analysis see Appendix Y.

Shop window (7.11)

In this model *Shop window* (7.11) acts as dependent variable and characteristics *View through shop window* (18), *Window dressing* (19), *Dominant color in shop window* (20), *Size of shop window* (21) and *Signage on façade* (22) act as independent variables. First a correlation matrix was created (see Appendix Z) and because of the several high correlations it was decided to leave characteristic 21 out of the analysis.

The test of increase in log-likelihood is done and LL(0) differs from LL(β). Also the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 has a high significance (sig. = 0.000). H_0 is rejected. H_0: the model without the predictors is as good as the model with the predictors.

If the model fits well, the observed and expected cell counts are similar and the observed significance level is large for the Pearson and Deviance goodness-of-fit statistics (H_0 = model fits). This analysis meets this condition.

With the ordinal regression procedure the level of prediction can be found. Also the strength of the association between the dependent variable and independent variables is measured with the R-Squares of Cox & Schnell, Nagelkerke or McFadden.

The independent variables in the output with a significance lower than 0.05 were deleted (sig. > 0.05). This resulted in a combination of two predictor variables. Their *Estimates* are visually reproduced in Figure 6-5. Two R-Squares are higher than 0.1: the Nagelkerke R-Square is 0.139 and the Cox & Snell is 0.129, which is low but reasonable. *Signage on façade* (22) is the strongest predictor with a β-coefficient of 2.191, which means a positive effect with average signage on the appreciation of the shop window and there is a less but still positive effect for a discreet signage. Striking signage has no effect, because the model set it to zero. Further, an open view through the shop window inside the store has a negative effect on the appreciation. For the detailed output of the analysis see Appendix AA.

Layout of the store (7.12)

In this model *Layout of store* (7.12) acts as dependent variable and characteristics *Visibility of dressing rooms* (24), *Width of aisles* (25), *In-store furnishing* (26) and *Routing in store* (28) as independent variables.

The test of increase in log-likelihood is done and LL(0) differs from LL(β). Also

the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 has a high significance (sig. = 0.008). H_0 is rejected. H_0: the model without the predictors is as good as the model with the predictors.

This analysis does not have a large significance level for the Pearson and Deviance goodness-of-fit statistics. This model does not fit and parameters should not be interpreted. For the detailed output of the analysis see Appendix AC.

Crowding (7.14)
In this model *Crowding* (7.14) acts as dependent variable and characteristic *Crowding in store* (29) as independent variable.

The test of increase in log-likelihood is done and LL(0) does not differ much from LL(β). Also the Chi-Square distributed difference between the two log-likelihoods multiplied by 2 is not significant (sig. = 0.512). H_0 is accepted. H_0: the model without the predictors is as good as the model with the predictors. Parameters should not be interpreted. For the detailed output of the analysis see Appendix AD.

6.4 MNL model with measurable characteristics

Analysis [4]
Multinomial logit model
Dependent variables: characteristic constructs.
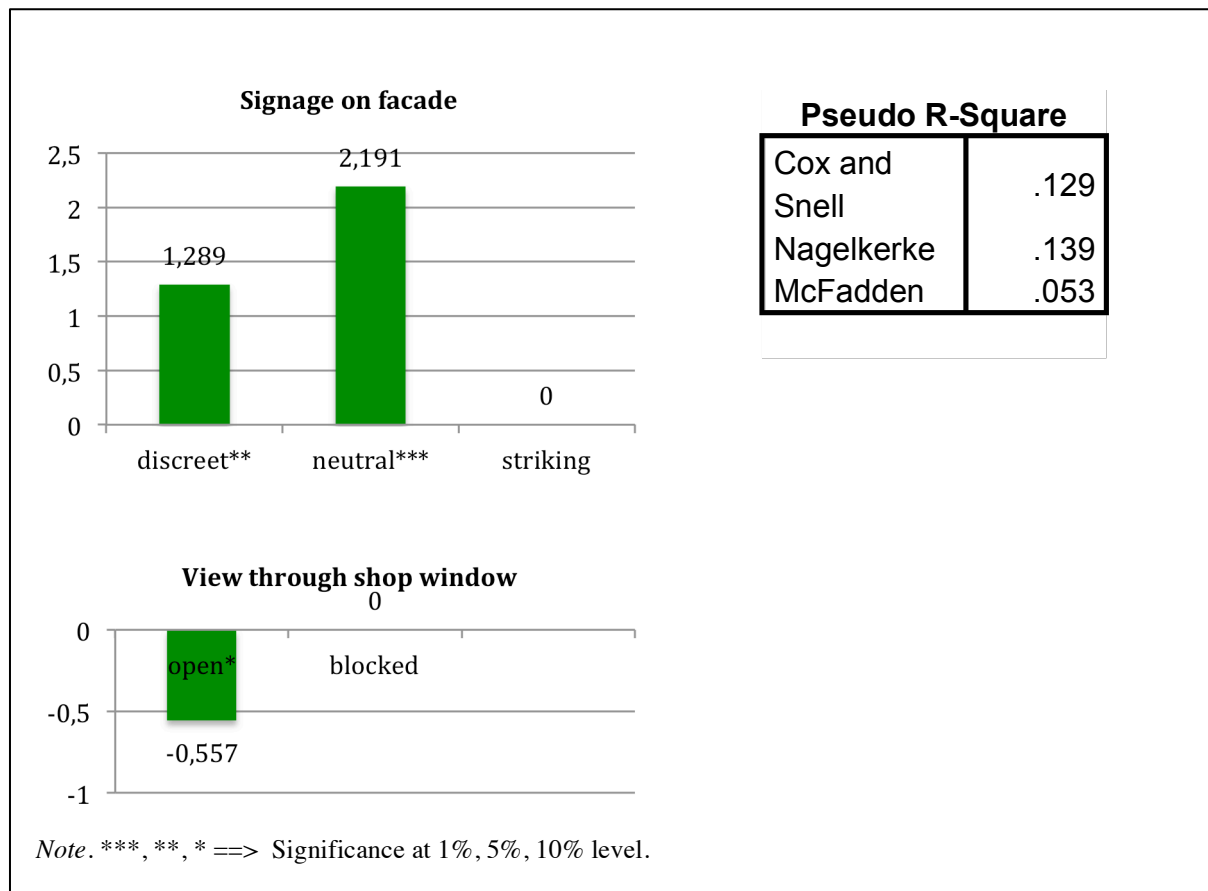*Independent variables: cluster of measurable characteristics.*

Note. ***, **, * ==> Significance at 1%, 5%, 10% level.

Figure 6-5 SPSS ordinal regression Shop window (7.11)

For discrete choice modeling, the multinomial logit (MNL) model is estimated with the program NLOGIT 5 (Econometric Software. Inc., 2012). In NLOGIT all data has to be dichotomous or ratio data, which means that all ordinal or nominal variables with more than two classes had to be transformed to dummy-variables, see Appendix AE for the recoding of the variables.

The set of measurable characteristics in Appendix F all contribute to constructs questioned for comparison in the survey with question 6.1 till 6.14. For this MNL analysis respondents answered which store (X or Y) they preferred in relation to each of the fourteen constructs. Survey questions 6.1 to 6.14 were used for this. Multinomial logit (MNL) models are estimated in order to obtain consumer preferences from choices between alternative stores. The same clusters of measurable characteristic from Table 6-2 in the previous paragraph were used. Not all constructs had measurable characteristics, so not all constructs could be analyzed. In the previous paragraph correlation matrices were made of each cluster of measurable characteristics. When there was correlation between the characteristics the dummy-variables of one of these characteristics were excluded from the MNL analysis. Three measurable characteristics were excluded because they were constant. These were *Color of ceiling* (2), *Visibility of cash registers* (23) and *In-store greenery* (27). Two measurable characteristics were combined, because they correlated 100% and shared the same values. These were *Composition of the ceiling* (1) and *Composition of the wall* (5).

Location of the store in mall (6.3)
The dummy-variable of the measurable characteristic *Passers-by segment* (30) is used as independent variable in relation to the preferences on *Location of the store* (6.3). In Appendix AF the complete statistical output of the results of the MNL analysis of construct 6.3 with and without the independent variable can be found. The analysis without the independent variables was used to calculate the LL(0). Subsequently, the McFadden R-Square was calculated: 1 - (-165.13202 / -167.04847) = 0.011. This means there is almost no association between the dependent variable and the independent variable. Results should not be interpreted.

Interior design of the store (6.4)
Due to a high correlation Characteristic *Color of wall* (6) is excluded in the MNL analysis. To find the consumers preferences on the *Interior design of a store* the dummy-variables of the following measurable characteristics are analyzed as independent variables: *Composition of wall & ceiling* (1), *Composition of floor* (3) and *Color of floor* (4). The McFadden R-Square for this model is: 1 - (-156.62138 / -158.73070) = 0.013, which means almost no association between the dependent variable and the independent variables. Results should not be interpreted. For the detailed output of the analysis see Appendix AG.

Space aspects of the store (6.5)
According to Table 6-2 the dummy-variables of six characteristics were measured to analyze the preferences of consumers on the construct *Space aspects* (6.5). However, the dummy-variables of three characteristics had no significant effect and were deleted: *Store depth* (7),

Store width (9) and *Store height* (12). For the remaining dummy-variables the McFadden R-Square of the model is: 1 - (-153.48884 / -162.88959) = 0.058. Meaning: the association between the alternatives and the independent variables is very weak. Results should not be interpreted. For the detailed output of the analysis see Appendix AH.

Music in the store (6.7)

The preferences of a consumer towards a store in relation to the construct *Music in the store* (6.7) is analyzed by taking the dummy-variables of characteristic *Music volume* (13) and *Background noise* (14) as independent variables. A low McFadden R-Square is calculated of: 1 - (-115.48551 / -117.14187) = 0.014, which means almost no association between the dependent variable and the independent variables. Results should not be interpreted. For the detailed output of the analysis see Appendix AI.

Light in the store (6.8)

The dummy-variables of characteristics *Amount of light* (15) and *Color of light* (16) are used as independent variables in relation to the preference on *Light in the store* (6.8). The McFadden's R-Square is: 1 - (-154.01281 / -155.95812) = 0.012, which means there is almost no association between the dependent variable and the independent variables. Results should not be interpreted. For the detailed output of the analysis see Appendix AJ.

Temperature in the store (6.9)

The dummy-variables of the measured *Temperature* (17) in relation to the preferences toward a store concerning the *Temperature* (6.9) showed no significant effect. The McFadden's R-Square is: 1 - (-145.34252 / -145.56091) = 0.002, which means there is almost no association between the dependent variable and the independent variable. Results should not

Figure 6-6 NLOGIT MNL model Shop window (6.11)

be interpreted. For the detailed output of the analysis see Appendix AK.

Shop window (6.11)
This construct has according to Table 6-2 five measurable characteristics that could be of influence. These characteristics are recoded into nine dummy-variables used as independent variables. However, the dummies concerning the *Size of the shop window* (21) and the *Signage on the façade* (22) are left out of the analysis because the model did not perform with these two. From the five remaining dummy-variables, one concerning discreet window dressing was deleted because it showed no significance in the model. Their *Estimates* are visually reproduced in Figure 6-6. The *View through the shop window* (18) shows a significant negative effect on the preference for the shopping window, meaning: a blocked view is preferred (sig < 1%). Also, a significant positive effect of a striking *Window dressing* (19) is found. The strongest predictor is significant positive for the *Dominant color in the shop window* (20) for the colors white or grey. Also the colors green or blue as *Dominant color in the shop window* show significant positive effect on the preferences of a shopping window. This means a red color is not preferred in this study. The calculated McFadden R-Square for this model is: 1 - (-141.77319 / -159.42385) = 0.111, which is a low but reasonable association between the dependent variable and the independent variables. For the detailed output of the analysis see Appendix AL.

Layout of the store (6.12)
The dummy-variables of several measurable characteristics were used to analyze the preferences regarding *Layout*

of a store (6.12). However, none of these showed significant effects. The McFadden R-Square is: 1 - (-161.17851 / -162.19644) = 0.006, which means there is almost no association between the dependent variable and the predictor variables. Results should not be interpreted. For the detailed output of the analysis see Appendix AM.

Crowding (6.14)
For the construct *Crowding* (6.14) the dummy of only one independent variable has been analyzed: *Crowding in store* (29). However, during the weekdays the survey was held it was never crowded. So only two values were used: quiet and average. The McFadden R-Square is: 1 - (-156.003001 / 162.19644) = 0.038, which means that there is a weak association between the dependent variable and the independent variable. Results should not be interpreted. For the detailed output of the analysis see Appendix AN.

6.5 Conclusion

This chapter described the results of the statistical analyses. Two types of analyses were used to find answers on the research questions: the ordinal regression and the multinomial logit model.

First, ordinal regression was used to find the strongest predictors in predicting the overall appreciation of a store. Among the fourteen constructs acting as independent variables, only five showed significant effect: *Product assortment* (strongest β of -2.754), *Image* (strongest β of -2.143), *Location* (strongest β of -2.118), *Shop window* (strongest β of -1.965) and *Temperature* (strongest β of -1.895). In the second analysis without the seven disaggregated atmospheric constructs only

four independent variables showed significant effect: *Image* (strongest β of -2.671), *Product assortment* (strongest β of -2.448), *Store atmosphere* (strongest β of -1.944) and *Personnel & service* (strongest β of -1.702). Concluded from these analyses can be that the *Products* of a store and the *Store image* are the strongest predictors of a stores' appreciation. This contrasts with the findings in the literature review, where *Store atmosphere* was repeatedly appointed being the most important predictor. However, the second model (without disturbance of the atmospheric constructs) shows that *Store atmosphere* does have a significant effect although it is not the most important one. For retailers this means focusing on the actual products is still highly important.

This research also tried to find the strongest predictors for the construct *Store atmosphere* among the seven atmospheric constructs. However, when the observed and expected cell counts of the model were compared: the Pearson and Deviance goodness-of-fit statistics did not show large significance levels thus the model did not fit and parameters could not be interpreted.

Subsequently, this study tried to find consumer preferences of 30 measurable characteristics in relation to the fourteen constructs (each acting as dependent variable). The two mentioned types of analyses were used in order to compare the results on differences and similarities. With the ordinal regression analysis the only good fitting models that were found concerned the characteristics of the constructs *Space aspects* (highest R^2 of 0.139) and *Shop window* (highest R^2 of 0.139). With the MNL model the only

good fitting model concerned the characteristics of the *Shop window* (R^2_M = 0.111). Concerning the *Space aspects of a store* analyzed with the ordinal regression, respondents preferred stores with one story instead of two stories. Also, a smaller entrance size is preferred on a scale of 1.5 to 4 meters. The other two characteristics (*Store width* and *Store size)* showed very low *Estimates*, which mean they have almost no effect. Concerning *Shop window* analyzed with the ordinal regression, respondents rated average signage on the façade positive and a discreet signage less but still positive. Also, an open view through the shop window was not preferred. The MNL model also showed that an open view through the shop window was not preferred. Further, the MNL model showed that a striking window dressing was preferred over a neutral window dressing. White or grey dominant colors in the shop window are rated positive and green or blue dominant colors in the shop window were rated less but still positive. The number of significant relations between variables is limited. However, the results of both analyses were not contradicting.

7 Conclusion and Discussion

Due to changing shopping behavior, shopping areas are changing as well. Shop vacancy is increasing but should not be solved by randomly filling spaces (Boersma et al., 2011). Retail area has to provide consumers in their needs and consumer experience is one of these needs (Boersma et al., 2011). According to Kotler (1973) atmospherics are one of the most significant features influencing consumer behavior and experience. Bearden (1977) even claims that they have the greatest influence on consumer behavior. There is some research on how consumers feel about their experience in shopping areas, but little research has been done on the consumer experience of stores in a shopping mall. The objective in this research is to get insight in the consumers' preferences on environmental characteristics (atmospherics).

To collect data, surveys were held that made consumers compare and evaluate store characteristic constructs. 270 consumers participated in this survey. The surveys were conducted in three shopping malls in Hoofddorp, Rotterdam and Amstelveen. In each of the three selected shopping malls three stores were selected in the subcategory *Clothing & fashion* (category *Fashion & luxury*). The participants compared two stores in each mall and stated their preference for each construct.

Ordinal regressions and multinomial logit models were estimated in order to find answers on the research questions. This final chapter describes the findings and conclusions regarding all sub questions in order to give a well-founded answer on the main research question:

How do store characteristics influence consumer appreciation of a store in a shopping mall and what are the consumer preferences regarding atmospherics of a store in a shopping mall?

7.1 Conclusions

1. How can store characteristics be defined?

Many studies have conducted research in the dimensions of retailer' image or characteristics of a store image (Ailawadi & Keller, 2004; Bearden, 1977; Yoo, Park & MacInnis, 1998; Turley & Milliman, 2000; and Du Preez et al., 2008). However, they all have different determinations of the attributes that describe a retail store image, but they all have some overlap. This study combined the descriptions and distillated seven store characteristics displayed in Table 7-1.

2. How can atmospherics of stores be defined?

Store atmosphere is one of the store characteristics. Disaggregated into different items they are called atmospherics and influence consumers on a macro and micro level. The macro and micro level of atmospherics concern the influence of atmospherics on the mall image and store image respectively. The *Store atmosphere* is disaggregated into seven atmospheric constructs and they are displayed in Table 7-1.

3. Which store characteristics contribute the most to consumer appreciation of a store?

For this question ordinal regression was used to find the predictors of the overall appreciation of a store. Among the fourteen constructs acting as independent variables, five influenced the appreciation: *Product assortment*, *Image*, *Location*, *Shop window* and *Temperature* (in this order of strongest prediction). A second analysis was done without the seven disaggregated atmospheric constructs. Among the remaining constructs four influenced the appreciation in this model: *Image*, *Product assortment*, *Store atmosphere* and *Personnel & service* (in this order of strongest prediction). From these analyses can be concluded that the products of a store and the image of a store are the strongest predictors of a stores' appreciation. This contrasts with the findings in the literature review, where

Store atmosphere was repeatedly appointed being the most important predictor. However, the second model (without the atmospheric constructs) shows that *Store atmosphere* is a predictor although it is not the most important one.

4. What are the consumer preferences regarding the atmospherics of a store?

This study also tried to find consumer preferences of 30 measurable characteristics in relation to the fourteen constructs. The two mentioned types of analyses were used in order to compare the results on differences and similarities. With the ordinal regression analysis the only good models that were found concerned the characteristics of the constructs *Space aspects* and *Shop window*. With the MNL model the only good model concerned the characteristics of the *Shop window*. Concerning the *Space aspects of a store* analyzed with the ordinal

Figure 7-1

Store characteristic constructs	Disaggregated characteristic constructs
1. Product assortment: variety of products and brands;	
2. Price-quality: Value and quality of products and the appropriateness of price;	
3. Personnel and service: knowledge and appearance of personnel and aftersales service;	
4. Store atmosphere: Creating an in-store personality and pleasant atmosphere;	4.1 **Music:** volume and background noise; 4.2 **Lighting:** amount and color of light; 4.3 **Temperature**; 4.4 **Interior design:** composition and color of ceiling, floor and walls; 4.5 **Shop window:** size of shop window, signage and window dressing; 4.6 **Layout**: furnishing, greenery and routing; 4.7 **Crowding:** amount of consumers.
5. Location of the store;	
6. Space aspects: store size and space;	
7. Image: Store reputation and clientele.	

regression, respondents preferred stores with one story instead of two stories. Also, a smaller entrance size is preferred on a scale of 1.5 to 4 meters. The other two characteristics (*Store width* and *Store size)* showed almost no effect. Concerning *Shop window* analyzed with the ordinal regression, respondents rated average signage on the façade positive and discreet signage less but still positive. Also, an open view through the shop window was not preferred. The MNL model concerning the *Shop window* also showed that an open view through the shop window was not preferred. Further, the MNL model showed that a striking window dressing was preferred above a neutral window dressing (no effect). White or grey dominant colors in the shop window are rated positive and green or blue dominant colors in the shop window were rated less but still positive. The number of significant relations between variables is limited. However, the results of both analyses were not contradicting and even had similar results concerning the *View through a shop window*.

7.2 Limitations and further research

Although this study provides interesting results, it also has some limitations that should be taken into account. First of all, the data was collected among consumers in enclosed shopping malls in order to exclude variables related to different types of shopping areas. It could be that the consumer preferences are different towards stores in e.g. a downtown shopping street. Secondly, the survey questions concerned appreciations and comparisons about clothing stores. The findings of this study might be very different when survey

questions concerned daily stores. Thirdly, this study collected data from a sample of 270 consumers (N = 270). Many models in this study did not perform (well) and could improve if the sample size was extended. Due to the limited numbers of respondents analyses could not be done differentiated by consumer segmentations: models would not fit. By extending the sample size, the amount of locations with more diversion among store characteristics could also improve. Also, the use of reported measures by consumers could lead to a possible single-source bias. This means that data is based on only one source, which could lead to the appearance of biases (Donaldson & Grant-Vallone, 2002). The choice for this design, however, is due to the aim to measure the perception of consumers. Still, future research efforts could incorporate alternative designs and multiple sources of data collection. By analyzing all store characteristic constructs found in the literature review this study became an extensive but maybe less focused research. For further research a consideration might be to focus on one construct in order to gain more detailed results.

7.3 Managerial implications

Beside the scientific relevance of this study, several findings can be useful for the retail sector. Due to the fact that retail areas are changing, knowledge about consumer preferences in respect to store characteristics is important. For retailers it is useful information that focusing on the actual products and image building of a store/brand is most important. But beside these two, focusing on atmospheric aspects of the store also improves the appreciation of a store. Concerning the shop window,

retailers should have average or discreet signing on their façade; a striking dressing of the shop window and the shop window should not have red colors. In this study the colors white grey, blue and green were preferred over red. For the real estate sector the findings of this study tell that it is important to create stores with one story instead of two and create a not to wide entrance size or at least create the flexibility that retailers can adjust the entrance size to their liking. Furthermore, the view through the shop window inside the store should be blocked or at least the flexibility should be created to block the view behind the shop window if retailers would prefer this. It should be taken into account that all of these recommendations concern clothing stores in enclosed shopping centers.

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