Environmental influences on consumer behaviour

An empirical study into the contribution of environmental characteristics to the experiential value of the consumer, differentiated by age.

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Author
T.J.P. (Tim) Op Heij
timopheij@gmail.com

Master track Real Estate Management & Development
Departure of Architecture, Building and Planning
Eindhoven University of Technology

Committee

Eindhoven University of Technology
ir. A. Borgers
dr. ir. ing. I.I. Janssen

Multi Corporation
dr. H. Kok MRE

Dutch Council of Shopping Centres
Taskforce 'Consumer experience'

PREFACE

This report describes the process and the results of an empirical, mainly quantitative research that has been performed among consumers of two inner-city shopping areas in The Netherlands, and is complemented with qualitative research in terms of in-depth interviews with experts. This study was supposed to determine the effects of environmental characteristics on visitors of the shopping area, distinguishing groups differentiated by age. This graduation research is part of to the master track Real Estate Management & Development at the Eindhoven University of Technology and is completed during an internship period at Multi Corporation.

During the graduation period, I participated in a graduation atelier focussing on 'Consumer behaviour'. This form of cooperation resulted in three researches based on the same dataset. The other two reports describe consumer experience with an emphasis on (1) the purpose of the visit, or 'motivational orientation' of the consumer, and (2) consumer experience distinguishing historical and non-historical locations. Therefore, my special thanks to my two study companions Rick Willems (1) and Wouter Dijkman (2), with whom I have spent a lot of pleasant time working together and who made it possible to conduct a research on such a large scale.

I also want to express my thanks to all the people who have helped surveying and the professionals in the field of retail who made themselves available to participate in the in-depth interviews.

In particular, I owe my sincere gratitude to the members of the committee, Ingrid Janssen, Aloys Borgers and Herman Kok, who have supervised me during my graduation period.

Enjoy reading this master thesis,

T.J.P. (Tim) Op Heij

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SUMMARY

The Dutch inner-city shopping areas face a decreasing number of visitors and declining sales volumes. E-commerce, changing consumer behaviour, and aging are considered to be the main causes. Improving the experience in inner-city shopping areas may be a solution to attract more visitors. This research focuses on improving the atmospherics in inner-city shopping areas. More specifically, the main objective of this study was to empirically determine which atmospheric characteristics contribute to the shopper's appreciation of inner-city shopping areas

A literature study revealed a list 35 environmental characteristics, or 'atmospherics', which may affect the experiential value of shopping areas as perceived by shoppers. This list was pruned to 25 items by means of interviews with industry experts. These atmospherics include aspects such as the accessibility, the shop offer, the shape and material of the facades, the presence or absence of greenery and furniture, the dimensions and the crowdedness.

The literature review also revealed that shoppers differ in terms of shopping behaviour and appreciation of shopping environments. Shoppers may be segmented by their personal characteristics, their motivation, or other characteristics. Regarding shopping motivation, shoppers can be classified as hedonic or utilitarian motivated although a combination of motivations seems to occur as well. Hedonic motivated shoppers are more subjective and personalizing shoppers, resulting in playfulness and a fun and utilitarian motivated shoppers shop more task-related, efficient and rational. Regarding personal characteristics, age and gender may induce natural classifications. It is a necessity to consider all age classes while making efforts to increase the experiential value in inner-city shopping areas. However, the literature review proved that the needs and demands of youngster and elderly show many differences and that they probably have other interpretations and expectations of the environment. Therefore, this study focuses on the age of consumers and distinguished three classes: young shoppers aged 14 to 25, middle aged shoppers aged 26 to 50 and older shoppers aged 51 to 85. A secondary objective of this study was to elicit differences between these age groups regarding the appreciation of inner-city areas

The research was conducted in the historic inner-cities of two Dutch medium sized cities: Maastricht and 's-Hertogenbosch. Within each of these inner-city areas, four locations were selected. In the selection of these shopping locations, the appearance (historical versus non-historical) of the location functioned as an important criterion. In each city, two historical and two non-historical locations were selected. At each location, the 25 characteristics were measured/assessed.

By means of a survey, shoppers' opinions were collected. Each respondent was asked to rate each item on a 7-point Likert scale. In addition, each respondent had to rate the overall appreciation and the sphere of the location under consideration. Furthermore, each respondent was asked to rank the four locations within the inner-city regarding overall appreciation and sphere. A total of 918 respondents participated during five midweek survey days.

The collected data were analyzed by various methods. Factor analysis was performed to reduce the set of variables. This resulted in three factors, namely 'dimensions', 'architecture' and 'environment'. The individual scores on the 25 items and the derived factors were subject of decision tree analyses. This technique links the dependent variable (the score on an item or factor) to one or more relevant independent variables: the observed characteristics. The results show if and which variables cause the largest impact on the shoppers' appreciations. In second instance, the categorical variable age was

added to examine the influence of this personal characteristic on the relation between appreciation of items and observed characteristics. Interesting findings were that especially older respondents prefer a historical appearance, narrow streets, shop windows and advertisement signs with low conspicuousness and that young respondents in general prefer the opposite concerning these aspects. The presence of greenery, furniture and music in shopping locations appeared to be appreciated by all ages.

Finally, multinomial logit (MNL) models was estimated using the most appreciated location from the rank orderings provided by each respondent. A selection of the observed characteristics, based on the results of the decision tree analyses, was used as potential explanatory variables in the MNL model. This analysis showed which combination of observed characteristics contributed most to the respondent's first choice of favourite location and the respondent's first choice of favourite location concerning sphere. Although the explanatory power of the models is limited, some observed characteristics appeared to significantly influence the shoppers' preferences. For the selection of the favourite location, the distance to the nearest public transport stop, amount of fashion and luxury shops, daily shops and restaurants/leisure outlets, and the shape of the facades seemed to contribute significantly to this choice. Concerning the most preferred location regarding sphere, the contributing aspects are the shape and colour of the facades, amount of light, background noise and width of the street. Taking age into consideration in interaction with the observed characteristics, the significant variables according to the MNL analysis appeared to be: fashion and luxury shops, daily shops and shape of the facades (choice of favourite location), and amount of light, width of the street and background noise (choice of most preferred location regarding sphere). Concerning the choice of favourite location, the positive influence of more fashion and luxury shops was more noticeable for respondents ranging from 51 to 85 years of age. For the middle age class, the positive influence of this amount decreased but still, appeared to be positive. The increasing utility of a location caused by the amount of daily shops exceeding one, was even higher for respondents aged 14 to 26 years. Although it remained positive, the influence of this aspect was the lowest for the oldest age class. In general, the shape of the facades should be historical. However, the youngest age class indicated a preference for a modern shape of the facades. For the choice of most preferred location regarding sphere, the amount of light should be low for all age classes, but this appeared to be especially applicable for the youngest age class. The general analysis proved that the width of the street should be equal to or less than 6.5 meters for the best sphere location. However, respondents ranging from 14 to 25 years of age showed a preference for streets wider than 6.5 meters. The background noise on the best sphere location should be average level instead of high level for all age classes, particularly for the oldest class.

To improve the appreciation of inner-city shopping areas, shopping centre managers and developers should consider the aspects mentioned above in attempts to improve the experiential value of shopping locations. In short, use historic icons and buildings if present, strive to narrow shopping streets with a high number of fashion and luxury shops, implement greenery and furniture and make sure that the accessibility is good. Thereby, consumers of different ages show clear differences in the interpretation and appreciation of the examined atmospherics. Shopping centre managers and developers should take these differences in consumer groups into account.

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1. INTRODUCTION

This chapter provides the motivation for this study and functions as a fundament for the research goal, the main question and the sub questions. The introduction serves as the starting point for this entire study and intents to give an indication for the reason to conduct this study. Firstly, a brief description of the supply and demand side of the retail sector is given to provide an understanding of the current situation on the retail market. Thereafter follows the delineation of the research population, to finish with a clear direction in which this study takes place.

1.1 Motive

The world of retail is changing. On the one hand, there is the supply side that is represented by the shops or the shopping area and on the other hand, there is the demand side that concerns the consumers. The supply side is influenced by the online shopping phenomenon. The number of online purchases has increased with 7% in the first six months of 2012, compared to the last six months of 2012 (PostNL, 2012). Despite this increasing number of online purchases, it is hard to define to which extend online shopping is the cause of the decreasing number of visitors in shopping areas. The Netherlands are characterized by a dense retail structure which leads to the fact that shops are located nearby the consumer. The number of vacant shops varies by region. In well-functioning inner-city shopping areas, values of approximately two percent are conventional while in moderately or poorly functioning areas like Southern Limburg values near twenty percent occur (Dutch Council of Shopping Centres, 2011a). Disregarding the extent and effect of each individual change in the retail sector, it is clear that the nationwide consequences are that the consumer's spending and the number of shop visits are declining. This eventually has a large impact on the real estate market in terms of decreasing sales for the tenants of retail property, increasing vacancy rates and degradation of the shopping area.

The demand side is characterized by a rapidly changing consumer behaviour. Terms like individualization and aging are at the centre of this mutation. Since the seventies of the last century, consumers changed due to the rising prosperity. This was very beneficial for the city; the working city transformed in a fun city (Veenstra, 2012). Shopping turned into a recreational activity and therefore, the value of experience became an issue of increasing importance. Nowadays, it seems that people spend less time shopping as a recreational activity (NBTC-NIPO, 2008-2009). This is in some way surprising, since shopping is an accessible and approachable way of recreation, particularly when people have less money to spend. Especially young people represent a large share of this group since generally they do not have much financial strength. However, they do often seek social interaction, for instance in a shopping area. Concerning this aspect, elderly show similarities with the youngsters since they also consider shopping as a recreational activity. In contradiction to the youngsters, the older people usually do have sufficient financial resources (Angell et al. 2012). However, the needs and demands of both groups show many differences and they probably have other interpretations and expectations of the environment.

Besides the fact that current research is inadequate concerning the distinction between youngsters and elderly, there are several other reasons to focus particularly on these groups. These motivations are described in the following paragraphs.

1.1.1 Elderly

In 2011, the population of The Netherlands consisted of almost two million inhabitants between the age of 65 and 80 years. The prognosis is that there will be more than three million Dutch residents between 60 and 80 years old in 2038. Adding the group of 80-plussers results in an amount of over 4,5 million (see graph 1). To conclude, the proportion of elderly in the Dutch population will increase significantly.
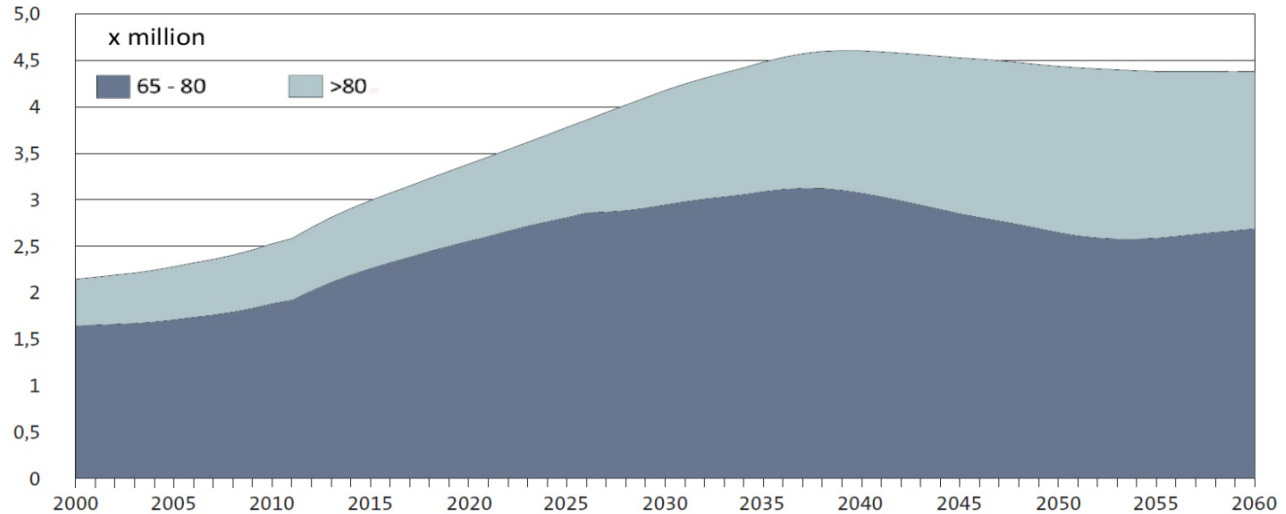
Graph 1.1; Aging 65 plus. Source: CBS [1] (2011)

There is no clear boundary that indicates when an individual can be regarded as a senior. However, it is necessary to define boundaries for this research. The retirement age is an important factor since elderly in general have more time for shopping activities when they stop working. Despite the retirement age which is fixed at 65 years, the average age of retirement was 63,1 in 2011. Only 6% retires before they reach the age of sixty and the vast majority (approximately 70%) stops working between the 60th and 65th year of life. The retirement age is increasing, during the start of the 21th century, the average retirement age was about the age of 61 (CBS Statline [1], 2012). It seems reasonable that people have more spare time for recreation or shopping activities when they are retired.

Not only the number of elderly is relevant, also the total capital of this population makes this group interesting for retailers. Indora (2009) claims that people over 50 years of age own about 80% of the total Dutch capital. Thereby, 42% of the 50-plussers indicate that they spend money more easily as they grow older.

It seems obvious that elderly purchase goods and therefore spent their money in the physical, so called 'bricks-and-mortar', stores. Mostly, it is said that online shopping is mainly for the young generations who are familiar with the internet. However, it seems that the older generation make the most purchases online (Akhter, 2012; Abrahamson, 2009). This refers mainly to the booking of holidays. Nevertheless, this proves that older people are not necessarily reluctant to use the Internet. To conclude: the internet can also be a threat when it concerns older people. This again proves the importance of implementing the older people's needs and demands in interventions to potentially increase the number of visitors and purchases in shopping locations.

1.1.2 Youngsters

Breazeale and Lueg (2011) claim that self-esteem and extraversion are important personal characteristics for young people. More than other age categories, they connect the identity and the

image of a shopping area and associated aspects to their own identity. This makes this group sensitive for environmental influences. Self-esteem plays an important role in the decision to visit a shop or shopping area or not (Rosa et al., 2006). Allard et al. (2009) suggest that consumers with low financial strength consider shopping more as entertainment and, therefore, can be mentioned as hedonic or recreational consumers. Youngster take part in this group and form an important share in the amount of shop visitors. It is a necessity to maintain these people in the concerning shopping area as they grow older so that they are loyal to the shopping area and keep visiting when they probably have more financial strength.

Young people in general have good communication skills and are very sensible to what others say (Breazeale and Lueg, 2011). They share their experiences not by word of mouth, but more often with the use of social media. Positive, but also negative experiences of young shoppers are quickly circulated and they rapidly affect other young shoppers. This will surely influence the shopping visits and confirms the importance of considering this group creating an attractive shopping area.

1.1.3 Chances

Both generations provide chances for retailers. However, the consumer needs to be seduced to visit a shopping area. As mentioned before, the experience plays an important role. The experiential value, or entertainment aspect of retailing, or 'entertailing', is increasingly being recognized as a key competitive tool that responds to threats like internet shopping (Arnold and Reynolds, 2003). Pine and Gilmore (1999) argue the importance of experiential value since they claim that a shift from focus on goods and services to experience occurs if a country reaches a certain level of prosperity. The importance of the current experience economy is confirmed by many parties in the retail real estate sector, for instance by Corio with 'Favourite Meeting Places' and Multi Corporation with 'From places to buy, to places to be'. Adding experiential value to a shopping location is a way to potentially improve the deteriorating circumstances by changing the supply side. Since experience is something personal, it is hard to define. In this study, it is used as a measure for the attractiveness of a shopping area based on interpretations and feelings provoked by the environment. A high experiential value leads to a positive shopping experience and the appreciation of the environment contributes to this experiential value. Therefore, this study assumes that a positive appreciated aspect leads to a positive effect on the experiential value.

There are several attributes, that contribute to the decision whether to visit a shop or shopping area or not and that affect the experience during that shopping trip. Obviously, atmospherics are meant to create a certain atmosphere, whether it is purposeful or not. Most of the research is based on merchandise, accessibility, service and atmospherics. Research concerning atmospherics is almost always restricted to less tangible aspects. However, there are more, and more tangible, atmospherics. Turly and Milliman (2000) performed a literature review study that focuses on the research over the years on effects of facility-based environmental cues, or 'atmospherics', on the buyer's behaviour. This results in a summarizing overview of over more than fifty studies. To give an indication of the range of possible – also more physical – atmospheric elements, examples are: size of building, architecture, space design and allocation and lawns and gardens. More information about the conception of atmospherics can be found in the literature review, Chapter 2.4.

To conclude, this research will investigate which atmospherics in shopping areas influence the shopping experience and will focus on physical characteristics affecting the appreciation. Both the youngsters and elderly seem to be interesting consumer groups when it concerns experience during shopping activities. However, the needs and demands of an attractive shopping area with a good experiential value differs for each generation of consumers. Therefore, this study will consider these different age classes, ranging from youngsters to seniors, that are visiting shopping areas.

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1.2 Problem definition

Based on the previous paragraphs, this section provides the problem definition divided in a formulation of the goal of the research, the main research questions and the sub questions.

Research goal
The goal is to determine empirically which – and how – atmospherics contribute to the experiential value of the consumer, taking into account differences between the elderly and youngsters.

Main research question
The goal can be translated into the following main research question:

> ***Which – and how do – atmospherics of an inner-city shopping area contribute to the experiential value of the consumer, differentiated by age?***

Sub questions
The main research question will be answered by subsequently answering the following sub questions:

1. How can experiential value be explained?
2. How can 'atmospherics' be defined to provide useful characteristics of the shopping area.
3. Which – and how do – atmospherics contribute to the experiential value?
4. What are the differences between generations of consumers?

1.3 Conceptual model and research design

Figure 1.1 shows the conceptual model, which provides a schematic overview of the research question. The atmospherics can possibly influence the experiential value. The perception of this experiential value is likely to be dependent on the age of the consumer.
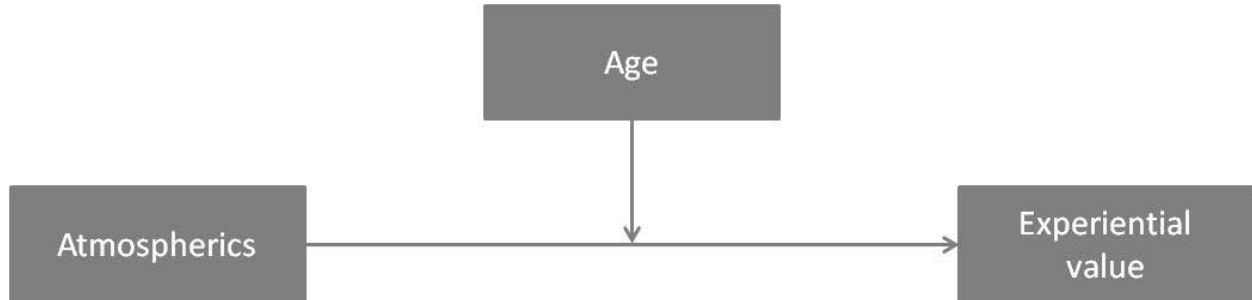
Figure 1.1; Conceptual model

The research design (figure 1.2) gives an overview of the contents of this study, divided into seven chapters. The study starts with the problem definition which is a result of the research motivation and formulates the goal and research questions. A literature review provides the theoretical background that functions as a foundation for the further study. Chapter 3 and Chapter 4 describe respectively the methods of the research and the study areas and research locations. The information gathered in the chapters before, is used to obtain the data. This is described in the data collection chapter. After the data is collected and recoded to create a useful dataset, the data analysis is performed and explained in Chapter 6. The research methodology is defined in Chapter 3. After completing the data analyses, the results are translated into conclusions which are described in Chapter 7. The final part of this study consist of the recommendations for further research and for people in practice.
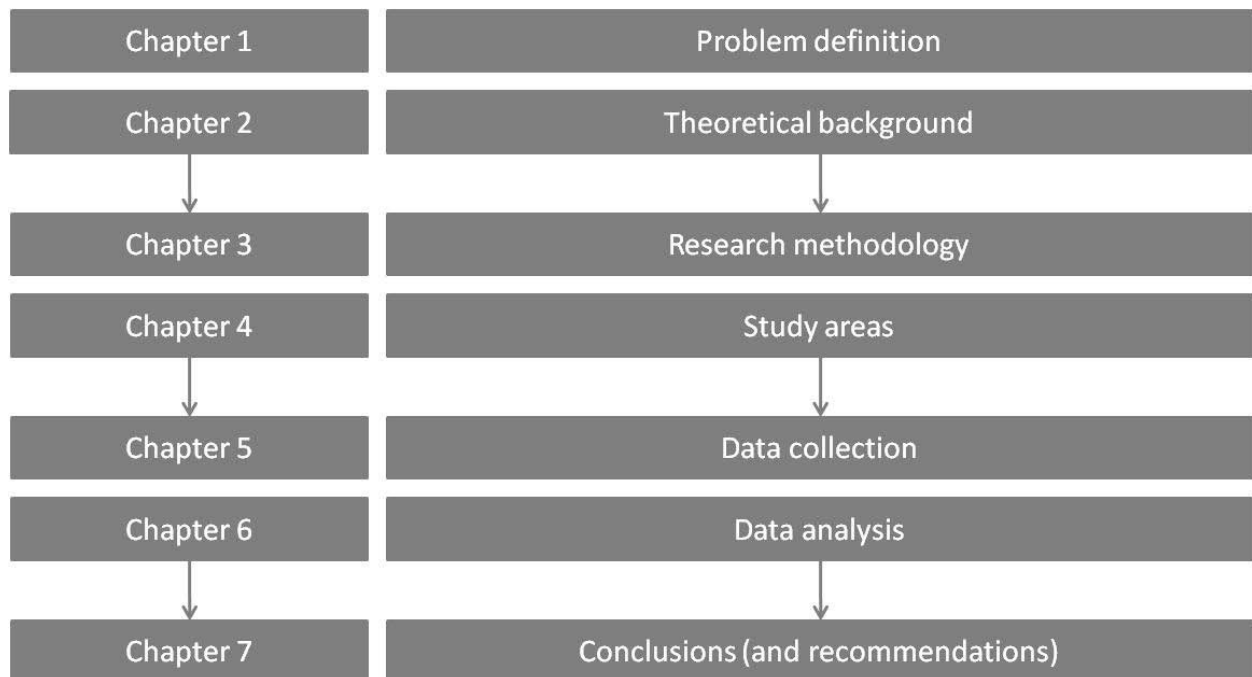
Figure 1.2; Research design

2. LITERATURE REVIEW

Based on the research question and the sub questions listed in Chapter 1, this chapter defines how atmospherics should be implemented in shopping areas in order to contribute to the consumer experience. Using academic literature will provide insight into; who the consumer is, consumer preferences and consumer motivational orientation. The next section describes where consumers shop and the relationship between consumers and the inner-city shopping area. The last part is about the atmospherically characteristics of inner-city shopping areas. Besides the literature review on atmospheric characteristics, several interviews with experts have been conducted to enrich current literature findings and to possibly substantiate statements. This chapter results in a final list of atmospherically characteristics for further analysis.

2.1 Motivational orientation

Shopping motivation has emerged as one of the key aspects in research on consumer behaviour and is therefore, till today frequently discussed (Wagner and Rudolph, 2010).

The field of consumer behaviour consists of three distinct activities: shopping, buying and consuming (Tauber, 1972). To improve the retail strategy decision-making of retailers shopper typologies are from the utmost importance. One of the first studies performed by Stone (1954) yielded four consumer types based on Chicago housewives. By conducting depth interviews with 124 female department store shoppers Stone was able to differentiate several distinct shopper types. In order to summarize the characteristics of each of the expressed answers brief sketches were made to cluster and filter the responses. This study by Stone (1954) was the first important study in an attempt to better understand the varying orientations toward the activity of shopping. Due to these early studies, determinants of consumers shopping behaviour are revealed thus providing new insights in the consumer which could be useful in many new strategies of different stakeholders (Westbrook and Black, 1985).

Tauber (1972) conducted an exploratory study by in-depth interviews to determine the reasons why people shop. This widely cited study hypothesized that people's motives are a function of numerous variables, several of which are unrelated to the actual buying of a product or the need for services. This unrelated need is fulfilled by a variety of psychosocial needs that go beyond the acquisition of products or services. These general motives have been classified by Tauber (1972) into two main dimensions – personal and social motives. The personal motives according to Tauber (1972) are role playing, diversion, self gratification, learning about new trends, physical activity and sensory stimulation. On the other hand the social motives are social experiences outside home, communication with others having a similar interest, peer group attraction, status and authority and the pleasure of bargaining. Ever since Tauber's article (1972), numerous researches have been done on consumer shopping motivations by various researchers (Westbrook and Black, 1985; Arnold and Reynolds, 2003; Wagner and Rudolph, 2010; Arnold and Reynolds, in press).

The first systematic effort to derive various motivation dimensions which underlie the consumers' shopping activity was made by Westbrook and Black (1985). Based on an interview with 203 adult female department store shoppers, seven dimensions of shopping motivation were identified: (1) Anticipated utility, (2) Role enactment, (3) Negotiation, (4) Choice optimization, (5) Affiliation, (6) Power/ authority and (7) stimulation. The existing literature shows that two fundamental motivational orientations underlie the different shopping motives:

1. Utilitarian; task-related, efficient and rational;
2. Hedonic; subjective and personal, resulting in playfulness and fun.

These two fundamental motivational orientations identified in the shopping-behavior literature are consistent with the fundamental motivational orientations identified in psychology (Kaltcheva and Weitz, 2006). In order to measure and assess the consumers perception of both hedonic and utilitarian consumers scales were needed. The results of Babin et al. (1994) proved, based on the consumption experience of consumers when shopping, that the distinct hedonic and utilitarian shopping value dimensions exist and that they are related to a number of important variables. As noted by Kaltcheva and Weitz (2006), the hedonic orientated consumers derive inherent satisfaction from the shopping activity itself while on the other hand the task orientated consumer engages in shopping out of necessity. This lack of pleasure during the shopping experience for highly utilitarian orientated shoppers is frequently found in retailing research (Lunardo and Mbengue, 2009). Contrary to the utilitarian consumers the hedonic consumers seek hedonic experiences for simulative and experimental qualities as approach motivation (Arnold and Reynolds, in press).

Because of the increasing importance of experience as a retailing strategy, Arnold and Reynolds (2003) investigated the hedonic shopping motivations. In this study, based on exploratory qualitative and quantitative studies, they identified a six-factor scale of shopping motivations. These hedonic shopping motivations are: (1) adventure shopping, (2) gratification shopping, (3) value shopping, (4) social shopping, (5) role shopping and (6) idea shopping. Cox et al. (2005) reassessed the pleasures of shopping and revealed that bargain hunting is one of the predominant activities when visiting brick and mortar stores. Bargain orientated shoppers are frequently described as cool and calculating economic shoppers in contrast to pleasure-driven recreational shoppers (Cox et al., 2005). An important contradiction between previous research done by Tauber (1972) and Westbrook and Black (1985) is that the findings of Cox et al. (2005) suggest that few shoppers enjoy the interaction with other shoppers. This interaction or social value is further researched by Rintamäki et al. (2006). The empirical evidence of this study supports a trichotomy of consumer value: hedonic, utilitarian and in particular, social value. This social value varies by day of week with a significant increase on Saturday (versus weekdays) when the store is more crowded (Rintamäki et al., 2006).

Consumers can be classified in various ways based on several characteristics. Existing research mainly distinguishes demographic and personal characteristics, behaviour and the motivation as variables. The next section provides a literature review on different consumers groups .

2.2 Consumer groups

Consumers are the starting point of the cash flow of the shopkeeper, the shop owner and the investor or bank. This emphasises the importance of knowing who the consumer actually is. Despite the fact that it is usually effective to design the shopping area according to the preferences of each kind of consumer, it is necessary to know who is visiting the shopping area and what the individual consumer's preferences are. Especially when considering aspects such as environmental atmospherics, it is relevant to know which needs and expectations come with which type of consumer. The first section of this chapter is about consumers' characteristics and their motivational orientation.

Consumers can be classified in various ways based on several variables. Existing recent research mainly distinguishes demographic and personal characteristics, behaviour and motivation as variables. In the early years, Stone (1954) made the first clustering of female department store shoppers using a questionnaire. This resulted in the following four shopper types. The (1) economic shopper placed the

greatest importance on price, quality, and variety when selecting a retailer. (2) Personalizing consumers preferred patronizing local merchants because of the relationships they formed with their staff. The (3) ethical consumers also preferred local merchants, but for a different reason. Instead of enjoying the personal attention elicited from smaller stores, these consumers felt a moral obligation to keep the local merchants in business. (4) Apathetic consumers noted little interest in shopping, and seemed to be driven by convenience motives. Later research also focused on females, mostly in department stores, until Bellenger and Korgaonkar (1980) conducted a study among mixed-sex adult shoppers. This was the first study that mentioned recreational shoppers. More recent research often distinguishes hedonic and utilitarian motivated shoppers determined by Babin et al. (1994), mainly based on gender (Raajpoot et al., 2008; Chebat et al., 2005; Chebat et al., 2007; Jackson et al., 2010; Pentecost and Andrews, 2010), age (Angell et al., 2012; Jackson et al., 2010; Massicotte et al., 2011) and income (Allard et al., 2009; Mägi and Julander, 2005). People with a higher income tend to shop more utilitarian. Considering gender, females tend to be more hedonic, more loyal, more sensitive to the environment, more motivated by uniqueness seeking, assortment seeking, social interaction and browsing, and possess a higher level of impulsive buying. Summarizing the studies based on age, results in three generation groups, starting with builders and baby boomers, consisting of people born between 1922 and 1964. They designate security and accessibility of major importance for their shopping trip. People born between 1965 and 1979, known as generation X, appraise functional congruity above self-congruity (self congruence occurs where there is an increased degree of consistency between the ideal self and the actual self) and are more driven by impulsive buying than the older generation. The youngest generation, generation Y, is born between 1980 and 1995 and places self-congruity above functional congruity, scores higher on fashion fanship, attitude towards fashion and impulsive buying and does the most frequent purchases. However, this group does not spend more than the other generations. Generation Y people distinguish themselves by adding more value to self-esteem and interpersonal communication. Regarding elderly, Keehnen (2008) distinguishes the following three generations:

- > 75   pre-war generation, retired and old
             Certainty is a priority. Loyal to the authority, peacefulness and order and the quest
             to economic security.
- 65 – 74   quiet generation
             Majority is retired. Relatively healthy, 70% has slight or no limitations.
- 55 – 64   Baby Boomers and protest generation
             Mostly vigorous and active. With a focus on democratization and individual
             development.

The youngest generation of elderly, ranging from 55 to 64 years of age, will grow at the highest pace until 2020. It is plausible that this generation will be the most active in the hedonic shopping activities. The upcoming generations of seniors have time and money and belong to the 'protest generation', the Baby Boomers. Due to their assertiveness, financial situation and their vigorous lifestyle, this generation will have other requirements concerning attractive retail facilities than the contemporary seniors (Dutch Council of Shopping Centres, 2011b). It is likely that the experience during shopping activities will have an increasing importance.

Additionally, there are studies that mention the effect of shopping alone, with family or with friends and the effect on the hedonic value. Borges et al. (2010) claim that shopping with friends results in the highest hedonic value compared to shopping with family or alone.

This study focuses on age, which has the advantage that it is easy to measure since it concerns absolute values. Recent research investigated the extent to which attitudes toward mall attributes and shopping value derived from a mall visit differ across generational cohort (Jackson et al., 2010). No differences in hedonic and utilitarian shopping values by generational cohort were found, but generational differences

in shopping attitude toward features like hygiene and entertainment did exist. Existing research lacks of conclusions about which, and how, attributes contribute to the shopping value for different generations. Thereby, existing research proves that different generations do have other requirements concerning the shopping environment. For example, elderly add more importance to historical characteristics and accessibility than youngsters. Furthermore, there is no research found that examines differences regarding the interpretation of physical shop attributes, or atmospherics, taking into account differences between generations. This study attempts to do so.

2.3 Shopping centre image

It is interesting to include the consumer's mind-set toward shopping areas. Farrel (2003) argued in his study: "Shopping centres are designed to make money. But shopping centres only make money if they make sense to consumers, so the development of shopping centres begins with market research, the art of finding money that is not yet being spent". Insight in consumers' preferences can be the key to a successful retail project (Verma, 2007). Bitner (1992) analysed how consumers respond to a retail environment and noted that consumers can react to a retail store in a cognitive, emotional and biological way. Much research has been conducted into shopping centre preference. Concluding from these studies it can be said that various aspects within a shopping centre influence the consumer's preference for a shopping centre. Sit, Merrilees and Birch (2003) reviewed studies examining shopping centre variables affecting the shopping centre image (Dennis et al, 2001; Frasquet et al., 2001; Wong et al, 2001; Bell, 1999; Wakefield and Baker, 1988; Fin and Louviere, 1996; Ahn and Hosh,. 1989; Wee, 1986; Weisbrod et al, 1984; Gautschi, 1981; Nevin and Houson, 1980; Howell and Rogers, 1980, Bellenger et al, 1977). The pioneering retail store image study was conducted by Martineau (1958, p47), who defined the concept as: "… the way in which (..) retail (..) is interpreted in the shopper's mind partly by its functional qualities and partly by an aura of psychological attributes."

The fact that numerous researches used the study of Sit et al. as foundation for their own research, made it outstandingly interesting to use conclusions of Sit et al.'s research. On behalf of their research Sit et al (2003) used fourteen studies to conduct an overview of image variables in shopping centre studies. They clustered all retail image variables into the following seven groups:

- Merchandising: (Assortment, quality, pricing and styling or fashion)
- Accessibility: (Ease of getting in and out and ease of navigating within the shopping area)
- Services: (Personal services, ambulance (escalators etc.) and amenities (restrooms etc.))
- Atmospherics: (Ambience, colour, décor, music and layout)
- Entertainment: (Special events (Santa Claus etc.) and specialty (movie theatres etc.))
- Food: (Food courts, cafes and restaurants)
- Security: ("Safe place to be").

Generally, the literature reveals four dominant groups in shopping centre image studies: merchandising; accessibility, services and atmospherics. Also called the 'big four' groups of shopping centre image. Sit et al. (2003) added three group's to these big four: entertainment, food and security. Not all groups are fully understood yet.

Much research has been done into shopping centre image attributes. Wong et al (2012) established in their research into shopping motives, store attributes and shopping enjoyment among Malaysian youth that there is still a lack of defined variables which contribute to the physical aspects of shopping areas. Especially, there is a lack of studies into atmospherics. Atmospherics have been analysed on a micro level for their influence on buying behaviour and sales numbers, but the experience atmospherics can create has hardly been analysed (Quartier, Christiaans, Van Cleempoel, 2008). It has been shown that

atmospherics actually contribute to consumer experience. Dorovan & Rossiter's (1982) results indicate that store atmosphere influences emotional states such as pleasure, arousal, dominance, and submissiveness and consequently blocks or elevates the consumers' mood and shopping motive. In a similar research on retail atmospherics, Gardner and Siomkos (1990) found that store atmospherics such as lighting, layout, displays, fixtures, colours, textures, sounds, and fragrance affect consumer product perception. Further, atmospherics have been reported to stimulate consumer excitement at a shopping mall (Wakefield and Baker, 1998). Evaluating the consumers' perception of atmospherics variables can craft retail store image, enhance customer value and increase consumer experience.

2.4 Atmospherics

As described in the above section, an atmospheric is an attribute which significantly influences the consumers' perception about a specific shopping area. This section will specify the atmospherics in more detail. The first part is about how atmospherics is defined. The second part zooms in on the topic and indicates the different variables of atmospherics leading to a list of inner-city shopping area aspects.

An atmospheric is defined as an important environmental cue that provides consumers with an indication of the quality of a shopping mall and includes items such as ambience, colour, décor, music and layout (Howell & Rogers, 1980; Sit, Merrilees & Birch, 2003; Howel, 2005). A distinction should be made between research in retail environments on a micro level and research on a molar level, based on the theory of Hull and Harvey (1989). They define micro characteristics as the physical characteristics of the environment that create a particular atmosphere, such as colour, music, light and sound. Molar characteristics are defined as 'emergent properties' that result from the sum of the micro characteristics, as atmosphere is. So far not much research has focused on the influence of molar characteristics on consumer behaviour because of the difficulty of analysing a sum of characteristics, which are synergetic and holistic.

Various researches have used different atmospherics to determine shopping centre attraction (Alqahtani, 2011), preference (Borgers and Vosters, 2010), experience (Farrag, El Sayed and Belk, 2010; Ibrahim & Ng, 2002; Tsjai, 2009), ambience, (Ragagopal, 2009), image (Chebat, Sirgy & Grzeskowiak, 2010; Sit et al, 2005), enjoyment (Lee, Ibrahim and Hsueh-Shan, 2005), or excitement (Wakefield & Baker, 1998). Both in academic literature and in graduation theses many variables have been found. Turley and Milliman (2000) note that there is a statistically significant relationship between atmospherics and shopping behaviour. Based on their review article they conclude that the effect of the retail environment on consumer behaviour is both strong and robust. The difficulty is to compare the different studies regarding variables of atmospherics. Besides, different variables are named, dimensioned and understood differently as well. Therefore, the different variables that have been found during the literature review are subdivided under homonymous variables. A selection of the most frequently named and/or apparent influential variables are listed. This resulted in a list of 35 variables which will be considered for further analysis. This list of atmospheric characteristics has been summarised:

- Indoor/ Outdoor
- Accessibility
- Advertisement
- Air conditioned
- Architecture
- Background noise
- Bars and Restaurants
- Colour pavement
- Colour facades
- Crowdedness
- Decoration
- Entrances

- Flooring
- Furniture
- Greenery
- Height buildings
- Location
- Material pavement
- Material facades
- Music
- Tidiness
- Other visitors
- Parking
- Shops

- Amount of light
- Smell
- Shape facades
- Shop windows
- Size of the centre
- Social Interactions
- Spaciousness
- Temperature
- Traffic Flow
- Width street
- Width to height ratio

2.5 Expert interviews

Besides the literature review on atmospheric characteristics several interviews with experts have been conducted to enrich current literature findings and to possibly substantiate statements which results from the later data analysis. These open-end in-depth interviews were structured according to a number of sub-questions. The open-end method allows the interviewer to deeply explore the expert's point of view by specific supplementary questions resulting in a semi-structured interview. Because of this semi-structured format, only key questions are asked in line with the current study. Additional questions are brought up based on specific answers of the experts during the interview, which results in a flexible interview. The answers provide more information about the current state of the Dutch retail sector and the possible influence of physical characteristics of shopping areas on consumer experience from the experts' point of view. The general interview (Appendix A) consists of the following parts:
- brief description of the motive and purpose of the study;
- brief description of the motive and purpose of the interview;
- several open questions about the current state of the Dutch retail sector;
- and several questions about the influence of physical characteristics of shopping areas on consumer experience.

The interviews with experts were mainly conducted at Multi Corporation, one of the largest retail developers in Europe, as part of this graduation project. Multi Corporation consists of many disciplines within the field of retail development. In cooperation with Herman Kok, Associate Director Research & Concept International Markets and mentor during this graduation project, a selection was made of experts both within Multi Corporation and other companies or organisations Interviews were conducted with several retail experts from Multi Corporation, WPM Groep and BRO. In addition, some of these experts are also committee members of certain interest groups. An overview of the interviewees can be found in appendix A, Table A1.

The interviewees opinions
The interviewees stated among other things that the quality of the environment is essential in constructing lasting consumer experience within shopping areas. Many of the historical shopping areas possess these positive characteristics contrary to more recent developments in and around the main shopping areas. Physical reorientation of the retail market is necessary to ensure a healthy shopping environment in the nearby future with consumer needs functioning as a starting point. The consumer experience of a shopping area will depend, besides the quality of the environment, on the atmosphere,

cosiness, tenant mix, accessibility and parking. This experience is different for each of the consumers visiting a shopping area.

Based on their experience in retail development, Multi Corporation applies atmosphere influencing characteristics intuitively as emphasised by the interviewees. There are three categories to be distinguished; hardware stores (purposeful purchase behaviour), supermarkets (combination of targeted shopping and a certain degree of 'experience shopping') and inner cities. The third category is focused on shopping and more entertainment-orientated. People can shop in an inner-city without purchasing goods, and still be satisfied about their shopping trip. Small streets are preferred in case of an indoor shopping area and wider streets in an outdoor situation. Traditionally, the height is two or three storeys with a width of eight to ten metres. The application of a middle section and two sidewalks may give the impression that (car) traffic may be expected. The following atmospherics (or physical characteristics) are relevant within a retail environment:

- Store supply and variation;
- Interrupting the shops with leisure or restaurants;
- Appearance, indoor or outdoor;
- Traffic, only residents, cars, bicycles;
- Walking distance to parking;
- Dimensions;
- Facade variation and pavement (materials and structure);
- Other visitors.

Whatever the consumers' orientation, everyone is aware of the fact that an area is historic or not. For a developer or designer, it is important to start with the historic icons in the area. Dimensions play a great role in the experiential value. It is necessary to create an 'exciting' area with 'sense of place'.

During the interview the experts were asked among other to rank the atmospheric characteristics of Table 2.1 based on their experience within the Dutch or European retail sector. By doing so, the most important atmospheric characteristics of the list of 35 most frequently named variables in academic literature, yielded 25 atmospheric characteristics for further analysis:

- Accessibility
- Shops
- Restaurants/ leisure
- Shape of facades
- Material facades
- Material pavement
- Colour facades
- Colour pavement
- Amount of light

- Background noise
- Music
- Smell
- Indoor/ outdoor
- Greenery
- Furniture
- Shop Windows
- Advertisement Signs

- Tidiness
- Width street
- Height buildings
- Width to height ratio
- Crowdedness
- Other Visitors
- Colour of light
- Elevations

2.6 Conclusions literature review

Shoppers are the starting point of the cash flow of the retailer, the shop owner and the investor or bank. By reviewing the literature of the particular topics in this chapter existing knowledge and findings contribute to situate the current study within the body of existing literature. Consumers can be classified in various ways according to the existing literature on consumers and consumer behaviour. Classifications of consumers is mainly based on motivation and personal characteristics. The interpretation of the environment and the shopping behaviour of the consumer differs with the age of the consumer. Youngsters focus more on the social aspect of shopping, add more value to interpersonal

communication and score higher on fashion fanship. Elderly designate security and accessibility of major importance and add more value to the historical value of shopping areas.

Much research is conducted to determine the reasons why people shop. Two fundamental motivational orientations underlie different shopping motives:
1. Utilitarian; task-related, efficient and rational;
2. Hedonic; subjective and personal, resulting in playfulness and fun.

The specific hedonic shopping motivations are important because of the increasing focus on experience as a retailing strategy. Literature suggest that predominant hedonic shopping motivations consist of: (1) adventure shopping, (2) gratification shopping, (3) value shopping, (4) social shopping, (5) role shopping and (6) idea shopping.

Much research has been done into shopping centre attributes that influence shopping centre image. These studies revealed that there are four dominant groups: merchandising; accessibility, services and atmospherics, also called the 'big four'. Atmospherics are an important group that significantly influences the consumer perception about a specific shopping area. Understanding the contribution of atmospherics of a shopping area is important because of their relation with consumer experience of the given area. Therefore a list of 35 most frequently named variables in academic literature and graduation theses has been considered.

Besides the literature review on atmospheric characteristics several interviews with industry experts have been conducted to enrich current literature findings. The interviewees pruned the list with 35 most important atmospheric characteristics to a list of 25.

3. RESEARCH METHODOLOGY

In this chapter, the methodology for the remainder of this research project will be described. Subsequently, the necessary data, the way of data collection, the locations of data collection, the process of data collection and the analysis methods will be explained. The purpose of these steps is to eventually draw conclusions regarding the most important physical characteristics affecting the shoppers' evaluation of the shopping environment, possibly in interaction with the shoppers' motivational orientation.

3.1 Qualitative research

Because of the exploratory character of this study, it was decided to measure shoppers' preferences regarding the atmospherics at different shopping locations. Two types of measurement were implemented: Likert scales and choices. 7-point Likert scales ranging from very low to very high are used to measure a shopper's appreciation for each of the 25 items on the list of atmospherics. For each item scoring very low or very high, the respondent will be asked to verbally explain this score. By means of a choice, shoppers have to select the most preferred shopping location from a set of shopping locations. For each respondent, this set of locations must contain at least two familiar shopping locations. A survey is used to collect this data from a large number of respondents. This is the most common form of quantitative research. The survey (Appendix B) is divided into several parts as shown in figure 3.1.
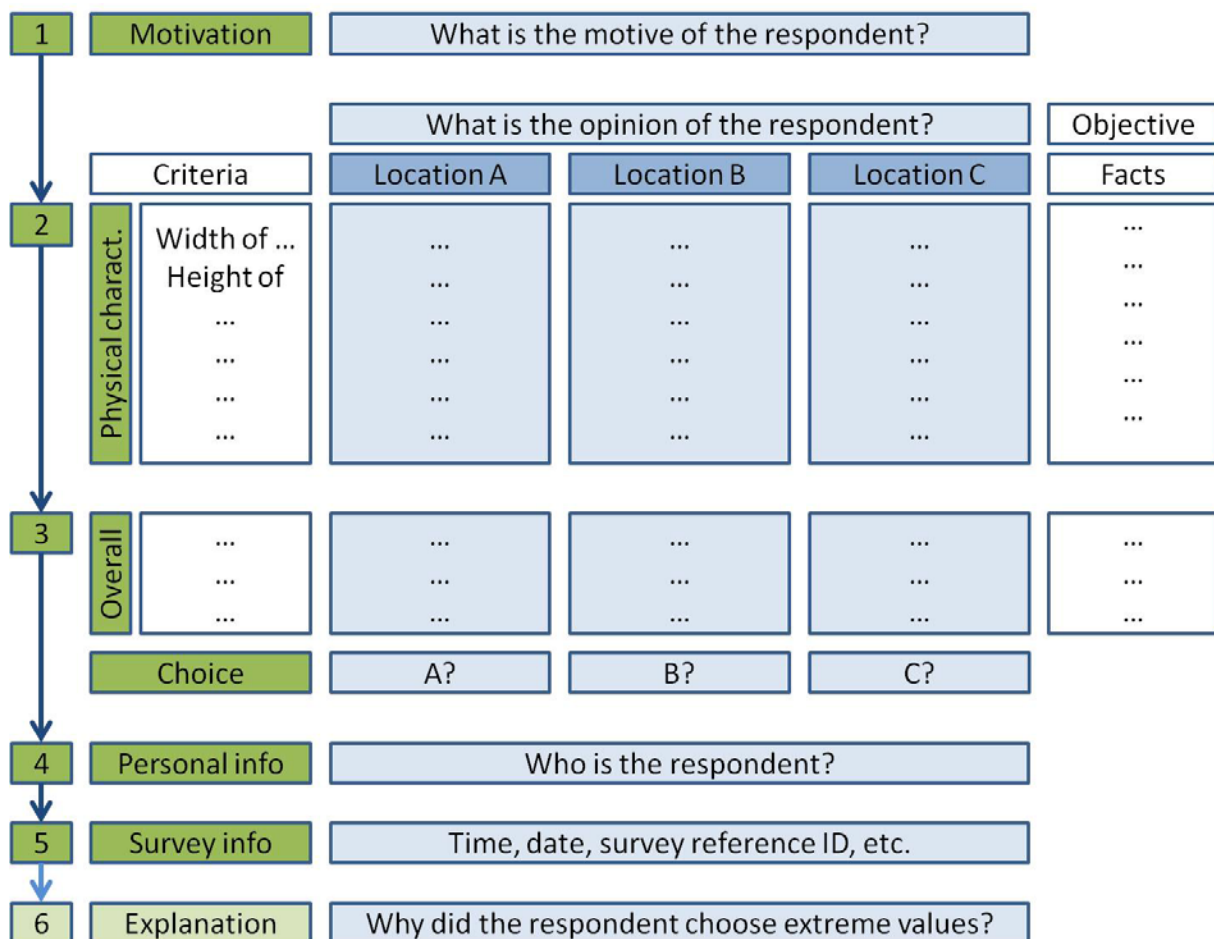
Figure 3.1; Overview survey

1. Shopping motivation as a direct question, and the determination of the shopping motivation using the list of Babin et al. (1994). This first part determines whether the shopper's motivation is utilitarian, hedonic or a combination of these two main motivational orientations.
2. This part describes the aspects concerning the 25 atmospherics characteristics as derived from the literature review and the expert interviews.
3. The third part of the survey is intended to give an overall appreciation and to compare the survey locations with each other. Also the choice of the most preferred location is elicited in this part. There is a distinction between the general appreciation and the appreciation concerning the sphere.
4. This part is indented to provide information about the respondent, for instance; age, gender, household composition and means of transportation.
5. General survey information.
6. The last part is added report reasons for extreme values in the appreciation of the individual characteristics of the locations. For each item scoring very low or very high, the respondent is asked to explain this score. This part was separated from part 2 to prevent that respondents do not select extreme values to reduce the completion time.

Because respondents have to compare and choose from multiple shopping locations, it was decided to select a number of locations in an inner-city shopping area. Shoppers visiting the inner-city are probably familiar with multiple locations within the inner-city shopping area. To increase variation among the locations, two inner-city shopping areas were selected. Physical characteristics of these locations were determined as well (see Chapter 4).

The data will be analysed in multiple ways and is further described in Chapter 6. First, the data will be described by means of descriptives. Next, factor analyses, decision tree analysis and choice models will be used. Especially the method of decision tree analysis is an explorative method. The finding of this method may guide the process of estimation the choice models.

3.2 Study areas and physical characteristics

Before conducting the actual study, it is important to define the study area. The main requirement regarding the selection of inner-city shopping areas, is to include different shopping environments in order to investigate the relationship between physical or physical characteristics and the perceived experience by consumers shopping in those environments. Both historical and modern environments are taken into consideration to enable measuring differences between the intrinsic attraction of historical vs. modern environments (CRS Group, 2012). The inner-city shopping areas or study areas were chosen according to the following criteria:

- located in the Netherlands;
- more than 100.000 inhabitants living in the city;
- similar social-cultural characteristics;
- contain both historical and non-historical shopping locations.

Figure 3.2; Cities located in The Netherlands

Based on these criteria, the historic city centres of Maastricht and 's-Hertogenbosch were selected after careful consideration of different Dutch cities (figure 3.2). Within the historic inner-city shopping area of each of the two cities, four mutually different survey locations were selected based on criteria as a historical versus modern environment an variance. The study areas will be further described in detail in Chapter 4.

25 physical characteristics for further research were selected as described in Chapter 2. These physical characteristics are assumed to affect the atmosphere in the shopping street and will serve as independent variables. These physical characteristics have been inventoried by the team of master students involved in this project.. The scores of the 25 physical characteristics have been determined as objectively as possible. The scores of the non-objective measurable variables are further described in appendix D. Because the crowdedness and the weather vary during the day, values were given during the actual surveys. The eventual value options per survey location of both Maastricht and 's-Hertogenbosch are reported in Chapter 4.

3.3 Surveying process

Dates and times

The dates and times are chosen considerately because the aim was to conduct the survey on regular days Wednesday till Friday. Public holidays, late-night shopping days and other day events are avoided. Because of the social security aspects, late-night shopping days are not relevant and therefore avoided. Saturdays are left out because of the supposed high number of recreational shoppers (Rintamäki et al., 2006).

To gain a representative result, the surveying takes place in each of the two cities from Wednesday to Friday. In Table 3.1 an overview is given of the surveying days in this study. The time frame comprises the almost entire duration of the opening hours. The original plan for the surveying period was to comprise six days. However, due to the bad weather conditions in 's-Hertogenbosch on Friday 13 juli, it was decided to skip this survey day. In determining the survey days local markets are not taken into account in both Maastricht and 's-Hertogenbosch. Because the main goal of the study is to establish which atmospheric characteristics determine the attractiveness of the inner-city shopping area, this will not affect the results.

Table 3.1; Overview selection Research Group

Location	Date	Start Time	End Time
Maastricht	4 juli	10:30	17:00
Maastricht	5 juli	10:00	16:00
Maastricht	6 juli	10:30	16:00
's Hertogenbosch	11 juli	11:00	16:00
's Hertogenbosch	12 juli	11:30	16:00
's Hertogenbosch	13 juli	-	-

The surveyors

During the five surveying days, several surveyors conducted the survey. These surveyors rotated according to a prearranged schedule over the survey locations so that they are constantly occupied. This schedule had also been drawn up for stating at what time the surveyor surveyed the location. Several days before the actual survey, the surveyors were instructed by means of a manual (Appendix C) to

ensure a trustworthy surveying process on the survey locations and an appropriate approach of the shoppers. There was a minimum of two surveyors on each location, mostly classmates and friends.

The surveyors were instructed to select the respondents randomly. The reason was to create a representative sample of all ages, genders and other personal characteristics. Each surveyor was instructed to introduce himself/herself as a student of Eindhoven University of Technology who is conducting a survey on behalf of a graduation research project. When the respondent was willing to participate, the surveyor completed the survey list together with the respondent. The surveyor clarified the questions but left the respondent responsible for the exact choice of the check boxes.

When the respondent refused to participate, the non-response questions were estimated by the surveyor and noted on the therefore prepared form. This information was meant for validation. The following information was required: (estimated) age, gender and group composition.

3.4 Conclusions research methodology

Because of the exploratory character of this study, it was decided to measure shoppers' preferences regarding the atmospherics at different shopping locations. Quantitative research by means of a survey is the most appropriate method to obtain the required data. A survey is used to collect this data from a large number of respondents. A survey is the most common form of quantitative research.

Based on these criteria, the historic city centres of Maastricht and 's-Hertogenbosch were selected after careful consideration of different Dutch cities. Within the historic inner-city shopping area of each of the two cities, four mutually different survey locations were selected based on criteria as a historical versus modern environment an variance.

The data will be analysed in multiple ways. First, the data will be described by means of descriptives. Next, factor analyses, decision tree analysis and choice models will be used. Especially the method of decision tree analysis is an explorative method.

The dates and times are chosen considerately because the aim was to conduct the survey on regular days Wednesday till Friday. Public holidays, late-night shopping days and other day events are avoided. The original plan for the surveying period was to comprise six days. However, due to the bad weather conditions in 's-Hertogenbosch on Friday it was decided to skip this survey day.

4. STUDY AREA AND SURVEY LOCATIONS

Before conducting the actual study it is important to define the study area. This chapter will describe the study area and survey locations in detail for both the historic inner-city shopping areas of Maastricht and 's-Hertogenbosch. First both cities will be compared by social-demographic, historic and general shopping characteristics. Within each of the two historic inner-city shopping areas four mutually different survey locations were selected of which two historical and two modern. As previously discussed the physical characteristics or independent variable of each of the survey locations are inventoried. The next chapter 'description of the collected data' will summarise the personal characteristics of the respondents that participated in the survey.

4.1 Study areas

Generally the shopping areas within a city can be divided into two groups, namely historical and systematically developed locations. The inner-city area is normally the oldest part of a city because of the expansion over the years from the city centre. These two groups of locations, along with the rest of the city, are shaped as a result of events or influences during the long history of the city. During the French occupation of Holland (1795 to 1813), for example, the architecture was influenced by the so-called Lodewijk styles. Given the problem definition of this study several survey locations, both historical and recently developed will be considered in order to answer the question whether atmospheric characteristics influence the experiential value on the locations. To limit the influence of several variables such as demographics and urban context, the inner-city shopping areas of the Dutch cities of Maastricht and 's-Hertogenbosch are chosen by a number of premises which have been previously described in Chapter 3.3. These two cities have a comparable, highly developed, regional retail function and are the provincial capitals of Limburg and Noord-Brabant respectively. The most important demographic characteristics of both cities are shown in Table 4.1. These demographic characteristics show that the cities are fairly comparable. However, they differ significantly when it concerns the educational level of the students. The educational level of the students is much higher in Maastricht, which can be seen in both the number of University students and the household size levels compared to 's-Hertogenbosch. These household size levels show, in combination with the number and educational level of the students, that Maastricht is comparable with the typical Dutch University city of Groningen (1.68).

Table 4.1; Demographic characteristics of the study areas (CBS, 2010A and CBS, 2010B)

Characteristics	Maastricht	's-Hertogenbosch
Inhabitants	118,533	139,607
Natives (%)	76.3	80.7
Immigrants(%)	23.7	19.3
Pressure per 100 persons aged 20-64	58.2	57.2
Green pressure (≤ Age 19)	29.6	35.2
Gray pressure (≥ Age 65)	28.6	22.0
Household size	1.87	2.12
Rented homes (%)	48	41
Educational level students		
MBO students	3154	3793
HBO students	4184	4012
University students	7336	1191

Grey- / green pressure: the ratio between the number of persons within the green or gray pressure compared to the people in the 'productive' age 20-65 years.

Based on information provided by Locatus as well as information collected from expert interviews within Multi Corporation, several survey locations within the study areas of Maastricht and 's-Hertogenbosch are selected. Locatus is a company that collects up-to-date information about shopping areas and consumer-oriented- and service related companies throughout the Benelux. Information like current facts and figures, sub-centres, number of passers, location segments, number of shops and branches related to shopping have provided a clear picture of facilities and diversity of shops for both cities and the survey locations in particular. The reason for the differentiation between the historical and non-historical appearance is that historical inner cities already possess attraction due to the experience that the historical environment evokes (CRS Group, 2012). The respective survey locations are further described in appendix E for Maastricht and appendix F for 's-Hertogenbosch.

General description Maastricht

The history of Maastricht began when the Romans built a settlement near a ford in the river. The name is derived from Mosae Trajectum, the place where one could cross the river Meuse. The settlement grew into a walled castellum for monitoring the crossing by means of a reinforcement (Kunsttrip, 2012). Maastricht has endured many sieges because of the strategically significant crossing of the river Meuse. Dutch, Spanish and French armies have often stood at the gates of Maastricht. In 1795, the occupiers took fairly radical measures: Maastricht is to be the capital of a French province, called 'Département de la Meuse Inferior' (Department of Lower Maas). After the fall of Napoleon, Belgium and the Netherlands form a kingdom under King William I. After a nine-year struggle (1830-1839), a separation took place. Because of the interference caused by General Dibbets, the city of Maastricht remained part of Holland (Kunsttrip, 2012). Nowadays, Maastricht is a relatively small city with approximately 122,000 inhabitants and a surface area of less than sixty square kilometres. It is a city within a metropolitan international atmosphere. Dutch, French and German, in addition to the Maastricht's dialect, are the vehicular languages. The city is rich in culture, history, monuments, folklore and traditions. Annually, more than 2.6 million tourists visit the city. Opposite the static, cultural and historical context of Maastricht are the dynamics of the current time, against the monumentality, vibrant city (Deckers, 2005).

Figure 4.1; Research locations in Maastricht

General description 's-Hertogenbosch

The history of 's-Hertogenbosch began in 1185 when Duke Henry I of Brabant, first Duke of Brabant, who possessed a large estate in nearby Orthen, founded the city of 's-Hertogenbosch. In order to protect the interest of the Duke of Brabant against the Counties of Guelders and Holland, the city was conceived as a fortress town (Holland History, 2012). From the beginning, the fortress city was no bigger than the central triangular market square. The earliest walls used to surround this square. The original medieval structure is largely retained till the present-day. Throughout the centuries, 's-Hertogenbosch successfully fought off attacks from Holland and Gelderland, as well as from the far north and the south, which was under the control of the Spanish population (Den Bosch, 2011). The city grew to become the second largest after Utrecht, with around 20,000 to 25,000 inhabitants at the beginning of the 16th century. In this flourishing period, one of the most famous sons of 's-Hertogenbosch was born called Hieronymus Bosch (1450-1516). Bosch was one of the greatest Renaissance painters in Northern Europe also known by the Spanish because of their influents in Holland as 'El Bosco' (Holland History, 2012). 's-Hertogenbosch became the political and cultural capital of Brabant in 1815 (Den Bosch, 2011). Nowadays, the late Gothic St. John's Cathedral, the classical city hall, the many winding streets with warehouses and merchants houses and the oldest brick house in the Netherlands 'The Moor' recall past time.

Figure 4.2; Research locations in 's-Hertogenbosch

4.3 Survey locations Maastricht

This paragraph describes the survey locations that are chosen for the historic inner-city shopping area of Maastricht. The exact survey point is indicated with a red cross on the aerial view figures. All of the survey locations are mutually different. The historical locations in Maastricht are the Maastrichter Brugstraat and Stokstraat. Entre Deux and Mosea Forum are the two contemporary locations in Maastricht. The survey locations are confided for analysis to the actual length of the street.

Maastrichter Brugstraat

The Maastrichter Brugstraat is probably one of the oldest streets of Maastricht and is adjacent to the famous 13th century stone arch Sint Servaas bridge which crosses the river Meuse. Throughout the centuries, the Maastrichter Burgstraat has functioned as the main shopping street of Maastricht. Due to the many historic buildings, this street nowadays has a boulevard-like atmosphere with a lot of greenery. This particular survey location is therefore, designated as a historic shopping location. The Maastrichter Brugstraat is part of the inner shopping area, one of the subcentres of the inner-city shopping area of Maastricht, which can be seen in appendix E. Information provided by the Locatus Explorer shows that the Maastrichter Brugstraat is a high traffic location, which means that many shoppers pass through this location. Based on this traffic, Locatus rated the Maastrichter Brugstraat as an A2 location.

Figure 4.3; Aerial view Maastrichter Brugstraat

Retail offer

The main shopping segment in the Maastrichter Burgstraat is fashion and luxury, see Table 4.2. In Appendix E, an overview of the facility offer of Maastricht is given. The Maastrichter Brugstraat is characterized by high street retail brand stores. Some examples of these stores are: Tommy Hilfiger, Van Lier, Hugo Boss, Villeroy & Boch, Lacoste, Cavallaro and Mc Gregor Shop.

Accessibility and parking

Because the Maastrichter Brugstraat is situated in the inner shopping area of Maastricht, there is a restriction on car use in and around this area. The overall accessibility of the specific location is quite good because of the many underground parking spaces and the main train station of Maastricht that is located in the vicinity. This train station is located on the other bank of the river Meuse which can be crossed by the Sint Servaas bridge.

Environmental influences on consumer behaviour

Table 4.2; Retail offer Maastrichter Brugstraat (Locatus Retail Verkenner 2012)

Facility offer	No.	Percentage
Retail	26	90%
Leisure	2	7%
Other	1	3%
Vacancy	0	0%
Total	29	100%

Retail offer	No.	(m²)
Daily	1	53
Fashion and luxury	22	2711
Leisure time	0	0
In and around the house	2	150
Other	1	30
Total	26	2944

Leisure offer	No.	Percentage
Café - restaurant	1	50%
Fastfood	1	50%
Total	2	100%

Stokstraat

The Stokstraat is the main street of the Stokstraatkwartier, a neighbourhood in the city of Maastricht, and has a long history back to the days of the Romans. The Stokstraatkwartier was built in the 17th and 18th century and was a true marketplace. In the second half of the 20th century, an extensive restoration transformed the Stokstraat from a working class neighbourhood to a new character: a shopping area with prestige and allure. The cobblestone pedestrian lane, frequently used in the pavement of early streets, emphasises the historic appearance. Nowadays, the location is the prime shopping location of Maastricht with many historical buildings and atmospherical aspects. The Stokstraat is part of the inner shopping area, one of the subcentres of the inner-city shopping area of Maastricht, which can be seen in appendix E. Information provided by the Locatus Explorer shows that the Stokstraat is a low traffic location. Based on the this traffic, Locatus rated the Stokstraat as a B2 location.

Figure 4.4; Aerial view Stokstraat

Retail offer

The main shopping segment in the Stokstraat is fashion and luxury, see Table 4.3. In Appendix E, an overview of the facility offer of Maastricht is given. The Stokstraat is characterized by high-end retailers, a chic atmosphere and historic buildings in a particularly narrow street. Here you will find true quality shops, including the top of the class fashion boutiques. Some examples of these stores are: Kiki Niesten, Stalman & Brunswijk, Cristel Marcellis and Olivier Strelli. These specific retailers attract a specific upper class audience.

Accessibility and parking

The accessibility and parking aspect for the Stokstraat is quite similar to that of the Maastrichter Brugstraat. This is because the Stokstraat is in fact a side street of the Maastrichter Brugstraat, but with a different physical environment.

Table 4.3; Retail offer Stokstraat (Locatus Retail Verkenner 2012)

Facility offer	No.	Percentage
Retail	28	74%
Leisure	2	5%
Other	7	18%
Vacancy	1	3%
Total	38	100%

Retail offer	No.	(m²)
Daily	0	0
Fashion and luxury	25	2022
Leisure time	0	0
In and around the house	2	115
Other	1	45
Total	28	2182

Leisure offer	No.	Percentage
Café - restaurant	1	50%
Café	1	50%
Total	2	100%

Entre Deux

Shopping Centre Entre Deux is located between the squares Vrijthof and Markt in the inner-city shopping area of Maastricht. Entre Deux derives its name from its location between the two squares, the French translation means 'between two'. Multi Vastgoed, in corporation with 3W, transformed the old neglected shopping centre enclosed by several historic buildings, into an elegant shopping district (2006). Among these historic building is the Dominicanenkerk (1292) as one of the oldest Gothic churches in the Netherlands. Entre Deux was designed by the architect Arno Meijs into a postmodern complex. In 2008, Entre Deux received the highly coveted ICSC European Shopping Centre Award 2008 from the International Council of Shopping Centres (ICSC). Information provided by the Locatus Explorer shows that Entre Deux is a fairly high traffic location (appendix E). Based on the this traffic, Locatus rated the Entre Deux as a B1 location.

Figure 4.5; Aerial view Entre Deux

Retail offer

The retail offer (Table 4.4) of Entre Deux is mainly based on shopping in the fashion and luxury branch. Some examples of these stores in this diverse middle class segment are: Jack and Jones, H&M, Men at Work, Zara, New Yorker, Geox , Xenos and Bjorn Borg. Besides this, there are some shops in the branch leisure such as: Cadeaux and Intertoys. In Appendix E, an overview of the facility offer of Maastricht is given.

Accessibility and parking

Because of its central location between the two main squares of Maastricht with the limited walking distance from the underground parking facilities, the overall accessibility of this particular location is very good. Because this location is situated in the inner-city, there is also restriction on car use. The main entrances of the complex are Domicanerkerkplein and Spilstraat.

Table 4.4; Retail offer Entre Deux (Locatus Retail Verkenner 2012)

Facility offer	No.	Percentage
Retail	22	71%
Leisure	1	3%
Other	1	3%
Vacancy	7	23%
Total	31	100%

Retail offer	No.	(m²)
Daily	1	36
Fashion and luxury	18	6454
Leisure time	3	674
In and around the house	0	0
Other	0	0
Total	22	7164

Leisure offer	No.	Percentage
Restaurant	1	100%
Total	1	100%

Mosae Forum

The Mosae Forum shopping area (2007) is a recent development of to project developer 3W and forms a passage way to the centre of Maastricht by the creation of a new shopping and residential area. The development was based on three important principles. (1) Expansion of the core shopping area with both large, crowd-drawing shops and small specialists, (2) restyling of the banks of the river Meuse and (3) a new workplace for the Maastricht municipal officials (Arcadis, 2012). The shopping centre consists of two parts. The southern part, designed by architect Bruno Albert of Liege, is partly integrated with the existing buildings. The northern building part was designed by Architect Jo Coenen & Co. Information provided by the Locatus Explorer shows that Mosae Forum is a fairly low traffic location (appendix E). Based on the this traffic, Locatus rated Mosae Forum as a B2 location. The fairly low traffic is explainable because Mosae Forum is located at the edge of the inner shopping centre of Maastricht.

Figure 4.6; Aerial view Mosae Forum

Retail offer

The Mosae Forum retail offer consists of a more diverse middle class segment shops with the emphasis on daily shops and clothing stores which can be seen in seen in Table 4.5. Some examples of these stores are: H&M, the Sting, Esprit, Van Haren, S.Oliver, Jumbo, Kruitvat and the Mediq Apotheek. In Appendix E, an overview of the facility offer is given for Maastricht.

Accessibility and parking

Mosae Forum is part of the inner shopping area, one of the subcentres of the inner-city shopping area of Maastricht, which can be seen in appendix C. Accessibility and parking were key aspects in the design of Mosae Forum, and led to an underground parking garage which resulted in a car-free location. The parking garage, which is easily accessible, has a capacity of 1,082 parking places and extensive facilities.

Environmental influences on consumer behaviour

Facility offer	No.	Percentage
Retail	21	66%
Leisure	3	9%
Other	3	9%
Vacancy	5	16%
Total	32	100%

Retail offer	No.	(m²)
Daily	9	2836
Fashion and luxury	9	5994
Leisure time	2	1174
In and around the house	1	515
Other	0	0
Total	21	10519

Leisure offer	No.	Percentage
Restaurant	1	33%
Lunchroom	2	67%
Total	3	100%
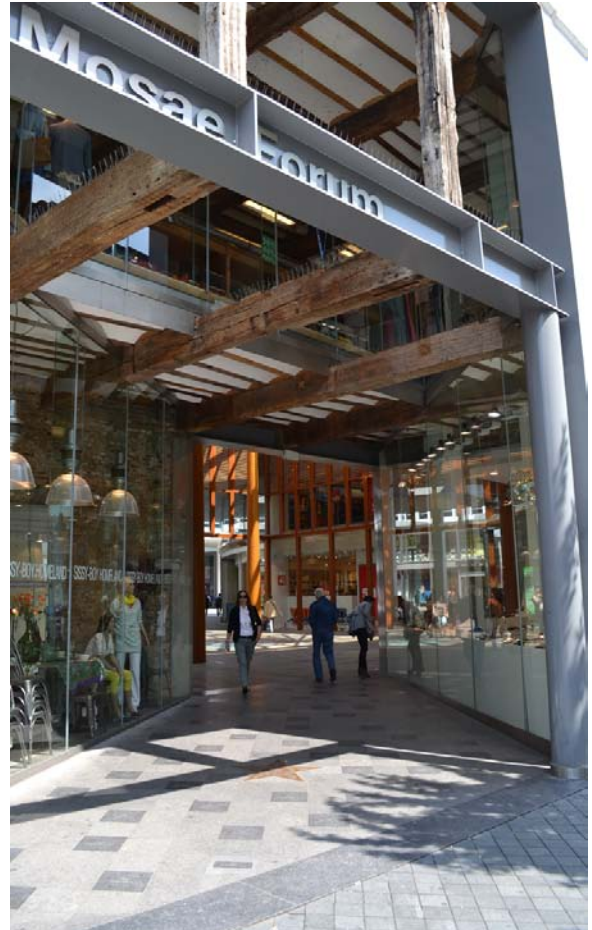
4.4 Survey locations 's-Hertogenbosch

In this paragraph a description is given of the survey locations concerning the historic inner-city shopping area of 's-Hertogenbosch. The exact survey point is indicated with a red cross on the aerial view figures. The historic locations in 's-Hertogenbosch are Hinthamerstraat and Kerkstraat. Burgemeester Loeffplein and Arena are the two contemporary survey locations. The survey locations are confided for analysis to the actual length of the street.

<u>Hinthamerstraat</u>

The Hinthamerstraat is the main shopping street and one of the older streets within the inner-city shopping area of 's-Hertogenbosch. The majority of the shops is situated in one of the many historic buildings. This particular survey location is, therefore, designated as a historic shopping location. Hinthamerstraat is part of the inner shopping area, one of the shopping streets of the inner-city shopping area of 's-Hertogenbosch, which can be seen in appendix F. Information provided by the Locatus Explorer shows that the Hinthamerstraat is a high traffic location. Based on this traffic, Locatus rated the Hinthamerstraat as an A2 location.

Figure 4.7; aerial view Hinthamerstraat

Retail offer

The retail offer of the Hinthamerstraat consists of a more diverse middle class segment shop offer with the emphasis on daily stores and clothing stores, see Table 4.6. Some examples of these stores are: America Today, Superstar, Xenos, Score, DiDi and Chasin` Denim. In Appendix F, an overview of the facility offer of 's-Hertogenbosch is given.

Accessibility and parking

Because the Hinthamerstraat is situated in the inner-city shopping area, there is a restriction on car use around this particular area. However, several parking facilities are on walking distance in the vicinity of the Hinthamerstraat.

Table 4.6; Retail offer Hinthamerstraat (Locatus Retail Verkenner 2012)

Facility offer	No.	Percentage
Retail	69	68%
Leisure	24	24%
Other	3	3%
Vacancy	5	5%
Total	101	100%

Retail offer	No.	(m²)
Daily	11	774
Fashion and luxury	37	4772
Leisure time	7	731
In and around the house	11	1374
Other	3	330
Total	69	7981

Leisure offer	No.	Percentage
Café/ restaurant	17	71%
Cultural	4	17%
Other	3	13%
Total	24	100%

Kerkstraat

The Kerkstraat is the main shopping street and one of the older streets within the inner-city shopping area of 's-Hertogenbosch. The majority of the shops is situated in one of the many historic buildings together with many of the prime retailers. This particular survey location is, therefore, designated as a historic shopping location. The Kerkstraat is part of the inner shopping area and functions as one of the shopping streets of the inner-city shopping area of 's-Hertogenbosch, see appendix F. Information provided by the Locatus Explorer shows that the Kerkstraat is a fairly high traffic location which means that quite a number of shoppers are passing through this location. Based on this traffic, Locatus rated the Kerkstraat as a B1 location.
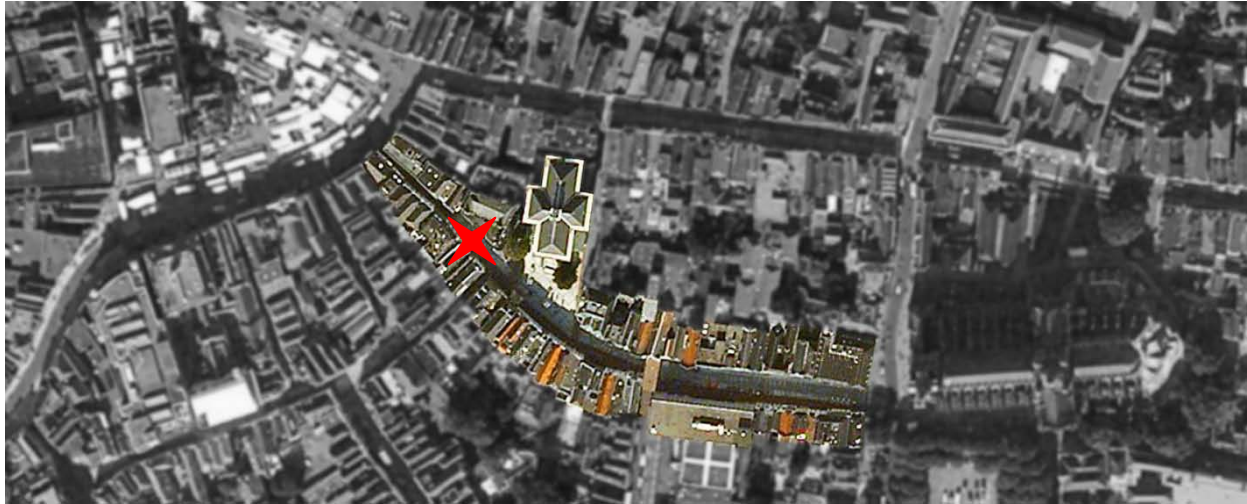
Figure 4.8; Aerial view Kerkstraat

Retail offer

The main shopping segment of Kerkstraat is fashion and luxury, see Table 4.7. Besides the many fashion and luxury stores, a variety of restaurants is situated in the Kerkstraat. The fashion and luxury stores are characterized by high-end retailers and fashion/art boutiques. Some examples of these stores are: Schaap & Citroen, Pall Mall, Claudia Sträter, McGregor, Purdey, Scapa Ladies, Fred de la Bretoniere, Geddes & Gillmore Cavallaro Napoli. In Appendix F, an overview of the facility offer of 's-Hertogenbosch is given.

Accessibility and parking

Because the Kerkstraat is situated in the inner shopping area of 's-Hertogenbosch, there is a restriction on car use in and around this particular area. The overall accessibility of the specific location is quite good because of the parking spaces in the vicinity.

Table 4.7; Retail offer Kerkstraat (Locatus Retail Verkenner 2012)

Facility offer	No.	Percentage
Retail	36	71%
Leisure	9	18%
Other	5	10%
Vacancy	1	2%
Total	51	100%

Retail offer	No.	(m²)
Daily	1	75
Fashion and luxury	32	6570
Leisure time	3	711
In and around the house	0	0
Other	0	0
Total	36	7356

Leisure offer	No.	Percentage
Restaurant	5	56%
Café-restaurant	1	11%
Café	1	11%
Ijssalon	1	11%
Hotel Restaurant	1	11%
Total	9	100%

<u>Arena</u>

As previously mentioned, the decrease in the number of visitors in the second half of the 90s resulted in the physical reorientation of parts of the existing shopping area. With the development of shopping centre Arena, an expansion of the current retail structure was realised. The shopping centre is annular and comprises two shop layers of which one is located beneath the surface that is surrounded by shops. Besides the quality shops, fountains, fixed sitting areas and leisure facilities help to created a vivid shopping area.

Arena is part of the inner shopping area, one of the shopping streets of the inner-city shopping area of 's-Hertogenbosch, which can be seen in appendix F. Information provided by the Locatus Explorer shows that Arena is a fairly high traffic location, which means that quite a number of shoppers are passing through this location. Based on the this traffic, Locatus rated Arena as a B1 location.

Figure 4.10; Aerial view Arena

Retail offer

The retail offer (Table 4.8) of Arena is mainly based on shops in the branch fashion and luxury. Some examples of these stores in this diverse middle class segment are: Blokker, New Yorker, Pieces, H&M, Vero Moda and Björn Borg. Besides this, there are some shops in the branch leisure and daily shops such as: Albert Heijn and Kruidvat. In Appendix F, an overview of the facility offer of Maastricht is given.

Accessibility and parking

The underground parking, that is situated under the Arena complex, ensures an excellent accessibility and parking facility. This particular parking facility forms a starting point for many of the shoppers visiting Arena and 's-Hertogenbosch. Nearby bus stops increase this accessibility by means of public transport.

Facility offer	No.	Percentage
Retail	17	74%
Leisure	1	4%
Other	5	22%
Vacancy	0	0%
Total	23	100%

Retail offer	No.	(m²)
Daily	2	1377
Fashion and luxury	11	4146
Leisure time	2	300
In and around the house	2	22
Other	0	0
Total	17	5845

Leisure offer	No.	Percentage
Restaurant	1	100%
Total	1	100%

Burgemeester Loeffplein

In the second half of the 90s, there was a decrease in the number of visitors in 's-Hertogenbosch. Burgemeester Loeffplein was unattractive, with large buildings and a dominant traffic situation that did not fit into the historic character of the city (van der Heijde & Peddemors, 2006). After the revitalisation of this shopping area and the development of the shopping location Arena, a new lively area was created in the centre of 's-Hertogenbosch. This particular survey location is, therefore, designated as a contemporary shopping location. Burgemeester Loeffplein is part of the inner shopping area, see appendix F. This particular location is situated along a large square with a large amount of greenery. Information provided by the Locatus Explorer shows that Burgemeester Loeffplein is a high traffic location. Based on the this traffic, Locatus rated the Burgemeester Loeffplein as an A2 location.

Figure 4.9; Aerial view Burgemeester Loeffplein

Retail offer

The main shopping segment of the Burgemeester Loeffplein is fashion and luxury in a more diverse middle class segment shops, as can be seen in Table 4.9. Some examples of these stores are: Hilfiger Denim, Van Dalen, Jack & Jones, Björn Borg and DEPT. In appendix F, an overview of the facility offer is given of 's-Hertogenbosch.

Accessibility and parking

Because the Burgemeester Loeffplein is situated in the inner shopping area of 's-Hertogenbosch there is a restriction on car use in and around this particular location. However, the accessibility by car of the shopping location Burgemeester Loeffplein is very good because of the large underground parking area in the neighbouring Arena. The accessibility in term of public transport is, due the proximity of bus stops, also very good.

Facility offer	No.	Percentage
Retail	15	65%
Leisure	2	9%
Other	6	26%
Vacancy	0	0%
Total	23	100%

Retail offer	No.	(m²)
Daily	0	0
Fashion and luxury	12	2267
Leisure time	2	1766
In and around the house	1	81
Other	0	0
Total	15	4114

Leisure offer	No.	Percentage
Hotel/restaurant	1	50%
Restaurant	1	50%
Total	2	100%

4.5 Physical characteristics survey locations

As previously described in Chapter 3, values were given to the 25 physical characteristics that will serve as independent variables for the survey locations in both Maastricht and 's-Hertogenbosch. The specific values for the physical characteristics of survey locations are summarised in Table 4.10 and Table 4.11.

Table 4.10; Physical characteristics Maastricht

Maastricht

Independent variables	Maastrichter Brugstraat	Stokstraat	Entre Deux	Mosae Forum
1. Accessibility				
Distance to parking facility	300m	250m	200m	0m
Distance to public transport	400m	300m	200m	100m
2. Shops				
Fashion and luxury	22	25	18	9
Daily	1	0	1	9
Other	3	3	3	9
3. Leisure/restaurants	2	2	1	3
4. Shape of facades	1. Divers (historical)	1. Divers (historical)	2. Clean and uniform	2. Clean and uniform
5. Material of facades	1. Historical	1. Historical	2. Contemporary	2. Contemporary
6. Material of pavements	1. Rough	1. Rough	2. Smooth	2. Smooth
7. Colour of facades	2. Mixed	2. Mixed	3. Bright	3. Bright
8. Colour of pavements	3. Bright	3. Bright	3. Bright	3. Bright
9. Amount of light	3. High	3. High	2. Average	3. High
10. Background noise	2. Average	1. Low	2. Average	3. High
11. Music	2. Yes	1. No	1. No	1. No
12. Smell	2. None	2. None	2. None	2. None
13. Indoor	1. No	1. No	2. Yes	1. No
14. Greenery	18	1	0	0
15. Street furniture	1. No	1. No	1. No	1. No
16. Shop windows	2. Neutral	1. Discrete	2. Neutral	3. Striking
17. Advertisement signs	2. Neutral	1. Discrete	2. Neutral	1. Discrete
18. Tidiness	3. Good	3. Good	3. Good	3. Good
19. Width of the street	12m	5m	8m	20m
20. Height of the buildings	4	3	4	5
21. Width to height ratio	3	2	2	4
22. Crowdedness	time bound	time bound	time bound	time bound
23. Other visitors	-	-	-	-
24. Colour of the light	2. Average	2. Average	3. Warm	1. Cool
25. Elevation	1. No	1. No	2. Yes	1. No
26. Weather	time bound	time bound	time bound	time bound

Environmental influences on consumer behaviour

's-Hertogenbosch

	Hinthamerstraat	Kerkstraat	Arena	Burg. Loeffplein
Independent variables				
1. Accessibility				
Distance to parking facility	200m	350m	0m	0m
Distance to public transport	150m	250m	0m	0m
2. Shops				
Fashion and luxury	37	32	11	12
Daily	11	1	2	0
Other	21	3	4	3
3. Leisure/restaurants	24	9	1	2
4. Shape of facades	1. Divers (historical)	1. Divers (historical)	2. Clean and uniform	2. Clean and uniform
5. Material of facades	1. Historical	1. Historical	2. Contemporary	2. Contemporary
6. Material of pavements	2. Smooth	2. Smooth	2. Smooth	2. Smooth
7. Colour of facades	2. Mixed	2. Mixed	1. Dark	1. Dark
8. Colour of pavements	2. Mixed	2. Mixed	2. Mixed	2. Mixed
9. Amount of light	3. High	3. High	2. Average	3. High
10. Background noise	2. Average	2. Average	3. High	2. Average
11. Music	2. Yes	2. Yes	1. No	1. No
12. Smell	2. None	2. None	2. None	2. None
13. Indoor	1. No	1. No	2. Yes	1. No
14. Greenery	0	0	0	15
15. Street furniture	1. No	1. No	2. Yes	1. No
16. Shop windows	2. Neutral	2. Neutral	3. Striking	3. Striking
17. Advertisement signs	3. Striking	2. Neutral	2. Neutral	1. Discrete
18. Tidiness	2. Average	3. Good	3. Good	3. Good
19. Width of the street	15m	10m	30m	50m
20. Height of the buildings	3	3	2	2
21. Width to height ratio	5	3	15	25
22. Crowdedness	time bound	time bound	time bound	time bound
23. Other visitors	-	-	-	-
24. Colour of the light	2. Average	2. Average	2. Average	2. Average
25. Elevation	1. No	1. No	2. Yes	1. No
26. Weather	time bound	time bound	time bound	time bound

5. DESCRIPTION OF THE COLLECTED DATA

This chapter gives a description about the characteristics of the respondents as part of the collected data. Firstly, the response and non-response of this study will be described for both Maastricht and 's-Hertogenbosch. Furthermore a description will be given about the general characteristics of the respondents who participated in this study. These general characteristics include age, gender, profession, shopping motivation etc.

5.1 Response and non-response

During three survey days in Maastricht and two survey days in 's-Hertogenbosch, 1374 shoppers were asked to complete the survey as part of this study. A total of 918 shoppers agreed to participate in the survey. This is a total response of 67% which is, compared to other studies, a good response for an empirical study. Considering the surveys conducted in both cities, 760 shoppers in Maastricht and 614 shoppers in 's-Hertogenbosch were asked to participate in the survey. This resulted in 473 respondents in Maastricht (62%) and 445 respondents in 's-Hertogenbosch (73%) (Table 5.1).

Table 5.1; Response and non-response

Shopper ask	Maastricht		's-Hertogenbosch	
	%	No.	%	No.
Non-Response	37.8%	287	27.5%	169
Response	62.2%	473	72.5%	445
Total	100.0%	760	100.0%	614

Of the total of 1374 shoppers who were asked, 456 shoppers (33%) refused to participate. When the respondent refused, the answers on the non-response questions were estimated by the surveyor. This information was meant for validation. The non-respondents have been documented in both Maastricht and 's-Hertogenbosch by a number of personal features, namely the respondent's gender, approximate age and group composition. The figures indicate clearly that female shoppers refused more than their male counterparts. This is probable because more women were asked to take part in this survey since they are the most predominant group in the shopping area which also can be seen in the results of the response. Looking at the age distribution of both study areas, results show similar distributions.

Table 5.2; Gender and age of the non-respondents

	Maastricht		's-Hertogenbosch	
Gender	%	No.	%	No.
Male	41.5%	119	42.6%	72
Female	58.5%	168	57.4%	97
Total	100.0%	287	100.0%	169
Age				
<18	3.5%	10	7.7%	13
18-25	22.0%	63	16.0%	27
26-35	18.2%	52	17.2%	29
36-45	19.6%	56	17.2%	29
46-55	17.8%	51	24.3%	41
56-65	13.6%	39	15.4%	26
>65	5.2%	15	2.4%	4
Total	100.0%	286	100.0%	169

Environmental influences on consumer behaviour

Comparing the non-response (Table 5.2) and the response (Table 5.3) indicates that the population is representative. However, the research population consists of a slightly higher share of females than observed at the survey locations. The share of both young and older people (aged younger than 25 years and over 55 years) in the research population is higher than the share that was present during the surveying period. This proves that especially the middle class was less willing to participate.

5.2 Characteristics of the respondents

Gender, age distribution and education
In total 918 shoppers (473 in Maastricht and 445 in 's-Hertogenbosch) were willing to complete the survey. Of these respondents in both cities, about 70% was female and only 30% was male. One possible reason is that more women were in the specific shopping area at the time of surveying. In addition, it is a possibility that women tend to lead the conversation while shopping in couples because of the affinity that most women have with shopping. After classifying age into several categories, Table 5.3 shows that the majority of the respondents, about 40% of the total respondents, is situated in the first category 14-25 year. This percentage can be explained because both Maastricht and 's-Hertogenbosch are typical Dutch university cities. It is remarkable that a relative small number of respondents is located in the category of 26 to 40 years (about 15%). This is probably because of this particular category forms the main working class and is, therefore, unapproachable during the time of the survey.

The educational level of the respondents is mainly of HBO grade (40% in Maastricht and 38% in 's-Hertogenbosch). Focusing on specific survey locations within both cities, the 'education level' is significantly higher in the Stokstraat compared to the other survey locations. Around 25% of the respondents participating the survey at that specific location possess an university grade educational level. Plausible explanation is that the Stokstraat is the prime shopping location of Maastricht with many high-end retailers which attracts a specific, better educated, upper class audience.

Table 5.3; Gender, age distribution and education

	Maastricht		's-Hertogenbosch	
Gender	%	No.	%	No.
Male	32.3%	153	29.0%	129
Female	67.7%	320	71.0%	316
Total	100.0%	473	100.0%	445
Age				
14-25	39.1%	185	41.3%	184
26-40	12.3%	58	14.2%	63
41-55	21.1%	100	24.5%	109
56-70	25.6%	121	16.4%	73
71-85	1.9%	9	3.6%	16
Total	100.0%	473	100.0%	445
Education				
Primary School	2.1%	10	2.0%	9
Secondary School	19.3%	91	15.3%	68
MBO	20.8%	98	28.8%	128
HBO	40.3%	190	38.3%	170
University	17.6%	83	15.5%	69
Total	100.0%	472	100.0%	444

Profession, household composition and net income

The majority of the respondents in both cities are working people, in Maastricht approximately 46% and 's-Hertogenbosch around 49% (Table 5.4). A substantial part of the remaining respondents are students (30%). This number can be explained because both Maastricht and 's-Hertogenbosch, as described before, are university cities bustling with students. The number of retirees in Maastricht is slightly higher with 17% against 15% in 's-Hertogenbosch. The unemployed portion is around 5% of the total respondents during this survey in both Maastricht and 's-Hertogenbosch.

Table 5.4; Employment. household composition and net income

	Maastricht		's-Hertogenbosch	
Employment	%	No.	%	No.
Student	34.0%	160	31.2%	138
Employed	45.6%	215	48.8%	216
Unemployed	3.6%	17	5.0%	22
Retired	16.8%	79	15.1%	67
Total	100.0%	471	100.0%	443
Household composition				
Alone with children	24.3%	114	11.3%	50
Living together without children	37.2%	175	10.4%	46
Alone with children	3.6%	17	31.8%	141
Living together with children	23.4%	110	15.3%	68
Student	8.3%	39	6.3%	28
other	3.2%	15	24.8%	110
Total	100%	470	100%	443
Net income				
< 1200	27.3%	107	32.2%	112
1200-2000	17.3%	68	17.2%	60
2000-4000	30.1%	118	31.6%	110
4000-6000	13.8%	54	14.4%	50
> 6000	11.5%	45	4.6%	16
Total	100.0%	392	100.0%	348

The respondents were also asked to describe their household composition. The results, regarding this topic, vary widely. For instance; in Maastricht there is a higher portion of respondents that have the household composition of 'Living together without children' (37%) and 'Alone with children' (4%). In 's-Hertogenbosch on the other hand there are high scores in the household composition of 'Alone with children' (31.8%) comparing to the household composition 'Living together with children (15.3%).

The net disposable household income of the respondents, as shown in Table 5.4, shows that both cities are comparable. Approximately 30% of the respondents have a net disposable household income of less than € 1,200 or a net disposable household income of € 4,000 to € 6,000. The higher income category of more than € 6,000 clearly shows that more respondents in this category are found in Maastricht (11.5%) than in 's-Hertogenbosch (4.6%). A total of 178 respondents refused to answer this particular question, the majority argued that such information was too personal to share.

Environmental influences on consumer behaviour

Visit frequency, shopping motivation and group composition
The visit frequencies of Maastricht and 's-Hertogenbosch are very similar to each other. The results, as shown in Table 5.5, indicate that the majority of the respondents (50%) visit the city less than once a month for shopping. About 18% of the respondents indicate that they visit the city on a monthly basis for shopping and about 30% visits the city more frequently.

Examining the actual shopping motivation, approximately half of the respondents have a hedonic shopping motivation in both Maastricht (52%) and 's-Hertogenbosch (45%). In 's-Hertogenbosch there is a slightly higher percentage of utilitarian based shopper than in Maastricht. This is probably a result of the slightly higher retail offer in combination with more leisure activities that are located in Maastricht in comparison with 's-Hertogenbosch. The combination of utilitarian and hedonic based shopping motivation counts for about 22% in both cities.

The vast majority of respondents were not alone when they visited Maastricht or 's-Hertogenbosch. Most respondents were part of a group composition with family (50%) or either with friends (35%). Only very few groups were composed of respondents with small children or groups consisting of 3 or more persons.

Table 5.5; Visit frequency, shopping motivation and group composition

	Maastricht		's-Hertogenbosch	
Visit frequency	%	No.	%	No.
2x per week or more	7.2%	34	7.2%	32
Weekly	13.8%	65	14.6%	65
2x per Month	9.1%	43	11.9%	53
Monthly	17.9%	84	16.2%	72
Less	51.9%	244	50.0%	222
Total	100.0%	470	100.0%	444
Shopping motivation				
Utilitarian	19.5%	92	27.4%	122
Hedonic	52.0%	246	45.2%	201
Both	22.4%	106	21.1%	94
Other	6.1%	29	6.3%	28
Total	100.0%	473	100.0%	445
Group composition				
Alone	12.7%	60	12.8%	57
Family	50.3%	238	49.4%	220
Friends	37.0%	175	37.8%	168
Total	100%	473	100%	445

Postal code and transportation
The majority of the respondents in Maastricht and 's-Hertogenbosch is originated from the provinces were the survey was held (Table 5.6). In Maastricht, the share respondents from Limburg is 58% and in 's-Hertogenbosch the share in respondents from Noord-Brabant is 63%. Noteworthy is the percentage of respondents visiting from outside the Netherlands. In Maastricht this percentage is much higher (12%) than in 's-Hertogenbosch (2%). Concerning the transport mode, most of the respondents arrived by car. In both cities, comparable values were found regarding transportation to the research locations.

Approximately 25% of the respondents use the public transportation system. However, looking at the specific research locations within both cities, the car use is significantly higher at Mosae Forum in Maastricht (65%) and Burgemeester Loeffplein in 's-Hertogenbosch (57%). This higher car use can be explained because both research locations are more recent developments at the edge of the inner-city shopping area. Thereby, underground parking facilities are situated nearby these survey locations.

Table 5.6; Postal code and transport mode

	Maastricht		's-Hertogenbosch	
Postal code	%	No.	%	No.
Limburg	58.4%	267	7.6%	32
Noord-Brabant	5.0%	23	62.6%	265
Other NL	24.9%	114	28.4%	120
Other	11.6%	53	1.4%	6
Total	100.0%	457	100.0%	423
Transport mode				
Car	51.5%	243	53.4%	236
Bicycle	10.0%	47	12.9%	57
Public transport	26.5%	125	25.1%	111
Walking	9.1%	43	7.0%	31
Other	3.0%	14	1.6%	7
Total	100.0%	472	100.0%	442

5.3 Conclusions collected data

This chapter has described the collected data of the individual respondents that participated this study. Thereby, a detailed overview of the response and non-response was given.

During three survey days in Maastricht and two survey days in 's-Hertogenbosch, 1374 shoppers were asked to complete the survey as part of this study. A total of 918 shoppers, 473 respondents in Maastricht and 445 respondents in 's-Hertogenbosch agreed to take part in this survey. Of these respondents, about 70% was female and 30% was male in both Maastricht and 's-Hertogenbosch. About 40% of the total respondents is categorised in the first age category ranging from 14 to 25 years of age. This percentage can be explained because both Maastricht and s-Hertogenbosch are typical Dutch university cities. The educational level of the respondents is mainly of HBO grade (40% in Maastricht and 38% in 's-Hertogenbosch). Focusing on specific survey locations within both cities, the education level is significantly higher in the Stokstraat (Maastricht), compared to the other survey locations.

The majority of the respondents in both cities are employed people, in Maastricht approximately 46% and 's-Hertogenbosch around 49%. A substantial part of the remaining respondents are students (30%). The net disposable household income of the respondents proves that both cities are largely comparable concerning this aspect. The results also indicate that the majority of the respondents (50%) visit the city less than once a month for shopping. Of the remaining respondents, 18% indicate that they visit the city on a monthly basis for shopping purposes. Examining the actual shopping motivation shows that approximately half of the respondents have a hedonic shopping motivation and were with someone when they visited. The majority of the respondents in Maastricht and 's-Hertogenbosch is originated from the provinces were the survey was held and used the car as means of transportation.

6. DATA ANALYSIS

This chapter describes the data analysis which is performed by sequential analyzing the frequencies, performing factor analyses and eventually doing decision tree analyses concerning the single items or a set of items (atmospherics), and the factors. Especially the last mentioned analysis is an explorative method to increase the potential for gaining useful and, probably, unexpected results.

Since the analyses results in a large set of tables and graphs, it is mostly limited to the main findings with a reference to a certain appendix containing the full analysis results. When the output is not appropriate to add to this report, it can be found on the enclosed disc (appendix disc).

6.1 Frequencies

Table 6.1a and 6.1b show the means of each aspect on each single location, each individual city and both cities together. They also show which location has the best respondent's rating on the city level (green figures). The mean values are based on the 7-point Likert scales varying from very negative (value = 1) to very positive (value = 7).

The mean ratings of the physical characteristics of Maastricht show that the majority of the characteristics are rated more positive in Stokstraat (historical), compared to the other survey locations in Maastricht. Concerning 's-Hertogenbosch, the same result is noticeable for the location Kerkstraat, which is in appearance the most similar location compared to Stokstraat.

More detailed frequencies can be found in appendix G. The tables in this appendix show the amount and percentage of responses, from very negative to very positive, for each individual aspect.

Table 6.1a; Mean rating values per location

Location	Accessibility	Shops	Restaurants/leisure	Shape facades	Material facades	Material pavement	Colour Facades	Colour pavement	Amount of light	Background noise	Music	Smell	Indoor/outdoor
Maastrichter brugstraat	5.69	**5.73**	5.28	5.80	5.54	**4.90**	5.29	4.78	5.61	5.12	**4.54**	**5.07**	5.14
Stokstraat	5.41	5.63	**5.40**	**6.36**	**6.15**	4.80	**5.63**	**5.18**	5.58	**5.31**	4.14	4.76	**5.62**
Entre Deux	5.37	5.44	4.90	5.44	5.23	4.58	4.70	4.71	5.43	4.42	4.19	4.43	4.82
Mosae Forum	**5.93**	5.73	5.12	5.15	5.05	4.65	4.53	4.51	**5.65**	4.76	4.21	4.93	5.21
Hinthamerstraat	**5.79**	5.55	5.42	5.64	5.39	5.05	4.91	4.75	5.50	4.90	4.47	4.75	5.03
Kerkstraat	5.73	**5.75**	**5.56**	**5.76**	**5.44**	**5.08**	**5.16**	**5.12**	5.64	**5.12**	**4.79**	**4.87**	4.97
Arena	5.49	5.10	4.89	4.68	4.76	4.97	4.50	4.77	**5.73**	4.89	4.09	4.52	**5.11**
Burgemeester Loeffplein	5.68	5.32	5.10	4.59	4.53	4.65	4.27	4.68	5.21	4.17	3.96	4.34	4.59

Location	Greenery	Furniture	Shop windows	Advertisement	Tidiness	Width street	Height buildings	Width-height ratio	Crowdedness	Other visitors	Colour of light	Elevations
Maastrichter Brugstraat	**4.50**	**4.01**	5.23	4.74	5.36	**5.69**	5.66	5.55	5.33	5.09		
Stokstraat	4.29	3.87	**5.71**	**5.05**	**5.86**	5.52	**5.74**	**5.65**	**5.60**	**5.20**		
Entre Deux	3.25	3.23	5.12	4.43	5.57	5.66	5.49	5.51	5.08	5.10	4.96	**5.03**
Mosae Forum	2.94	3.49	5.43	4.81	5.52	5.62	5.39	5.23	5.19	5.00	**5.13**	
Hinthamerstraat	3.06	3.31	4.62	4.34	5.21	5.57	5.41	5.30	5.03	4.92		
Kerkstraat	**3.59**	3.98	**5.24**	**4.78**	**5.46**	**5.77**	**5.48**	**5.42**	**5.27**	**5.20**		
Arena	3.50	**4.59**	4.95	4.52	5.43	5.63	5.22	5.14	5.17	4.90	**5.22**	**5.22**
Burgemeester Loeffplein	3.37	3.50	4.85	4.33	4.95	5.55	5.06	5.17	5.00	4.78		

6.2 Factor analysis

The goal of a factor analysis is to identify a number of latent variables from a set of observed variables. This reduces the set of variables in the dataset. The set of variables concerning the respondents opinion about the environmental aspects, or 'atmospherics', form the input of the factor analysis. Since the variable 'Colour of the light' is only applicable on the three locations Entre Deux, Mosae Forum and Arena, and the two variables 'Colour of the light' and 'Elevation's only on Entre Deux and Arena, there are many missing values in the dataset concerning these two variables. Therefore, these two items are ignored in the factor analysis preventing them to form an undesired factor. Adding them to the analysis will result in a factor consisting of only 'Elevation' and 'Colour of the light', disregarding that they have little substantive connection. The variables 'Tidiness', 'Colour of pavement' and 'smell' are also not included in the factor analysis since they have respectively little or no variation.
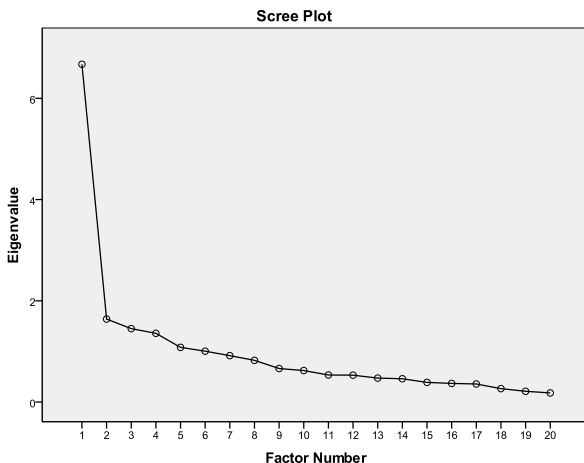
Figure 6.1; Scree plot

The factor analysis can be performed on Maastricht and 's-Hertogenbosch separated and on both cities as one. It is only allowed to perform a factor analysis when the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) has a value above 0.6. The results of the three tests, namely Maastricht, 's-Hertogenbosch and both cities at the same time, proves that the sample is adequate in each situation. In the situation of both cities together, the analysis results in a value of 0.874 (see appendix H for the factor analysis result).

The amount of factors can be determined by the scree plot. The plot in figure 6.1 shows the case of Maastricht and 's-Hertogenbosch. The plot results of the individual cities indicated similar results and, therefore, are not displayed in this section. The elbow-shape shows a dip after the first and the fourth component number. Since only one factor is not admissible for further analysis, the continuing of the analysis is performed with three variants; two

factors, three factors and four factors. Variables need to exceed the minimum value of 0.5 to be assigned to a certain factor.

The factor analysis with a fixed number of three factors provides the best usable result. The analysis with two factors adds 'Colour facades', 'Material facades' and 'Shape facades' to the environmental aspects 'Furniture' and 'Greenery' to function as one factor. Performing the factor analysis with a fixed number of four factors creates a fourth factor that consists of only one item, namely 'Shops'. Since this is already an item on itself, the number of fixed factors for the further analysis is set on three.
The analysis is performed on three different situations:
1. Factor analysis on both Maastricht and 's-Hertogenbosch;
2. Factor analysis on Maastricht;
3. Factor analysis on 's-Hertogenbosch.

1. Maastricht and 's-Hertogenbosch

Table 6.2 shows the three factors derived from the factor analysis on both cities.

Table 6.2; Factor analysis result of both cities

Factor 1 **'Dimensions'**	Factor 2 **'Architecture'**	Factor 3 **'Environment'**
Width-height ratio Height buildings Width street Crowdedness	Material facades Shape facades Colour facades	Furniture Greenery

2. Maastricht
The factors derived from this analysis results in the same factors as for both cities.

3. 's-Hertogenbosch
The factor analysis of the values regarding 's-Hertogenbosch has a comparable output. Factor 1 and 2 are the same as in both cities. Factor 3 however is more extensive. This factor consists of 'Furniture', 'Greenery' and 'Shop windows'. Despite of the plausible composition of this factor, mainly concerning the environment, the combination of 'Furniture' and 'Greenery' is more explicable since it represents clear and tangible aspects.

Best useable factor analysis result
The factor analysis of Maastricht and 's-Hertogenbosch functioning as one shows the most reasonable result (see Table 6.2). The variables of factor 1, 2 and 3 show a clear intrinsic match among each other.

The variables in factor 2 represent design variables disregarding the dimensional characteristics. These dimensional characteristics appear in factor 1. A possible explanation for the absence of 'Material pavement' in factor 2 is that it is the only design variable that is tangible, unlike the other design variables that probably will be judged by sight. Factor 3 has content concerning the environment.
Variables that did not exceed the value of 0.5 in the factor analysis, and therefore cannot be assigned to a factor: Accessibility, Shops, Restaurants/leisure, Material pavement, Amount of light, Background noise, Music, Indoor/outdoor, Shop windows and Advertisement signs.

6.3 Decision Tree Analysis

This section describes the analysis of each individual aspect concerning the environmental characteristics called 'atmospherics'. This part of the research links the dependent variables to the relevant independent variables. Thereafter, the factors that emerged from the factor analysis (described in section 6.1) are also linked to relevant independent variables and shown in this section.

For this research, it is important to know which variables influence the dependent variable. The tree analysis searches step by step for the variable and the classification of the variable that causes the largest difference in the distribution of the dependent variable. These values are the percentages of respondents that selected a certain appreciation of one aspect on the 7-point Likert scale (very negative – very positive). In each step, the analysis determines the best splitting variable. The variable will be included in the tree when it meets the requirements that it is the most relevant variable and causes a significant difference in the percentages of the dependent variable. To conclude, the tree analysis obtains the most affecting independent variable for a certain dependent variable and, thereby, gives the percentage of correctly predicted answers for the dependent variable. The decision tree is not trustworthy when the overall percentage correctly predicted is equal to or less than 14,3% (= 100% / 7 Likert scale options). The higher the score of overall percentage correctly predicted answers, the more reliable the decision tree results are. Thereby, adding or removing one or more variables to a certain decision tree will lead to another calculation of the overall percentage correctly predicted answers, when this value of the 'new' decision tree is higher, the added or removed variables result in an improvement of the reliability (and vice versa). This research has a range of percentage correctly predicted from 23,5% (low) to 47,5% (high). The decision tree analysis (CRT as growing method) uses one dependent variable, or one factor that is based on latent items, and one or more independent variables. The decision tree analyses is based on the 25 variables as determined in Chapter 3. The variables in Table 6.3 appeared to be inappropriate for the decision tree analysis.

Table 6.3; Variables that are inappropriate for decision tree analysis

Variable	Reason
Colour of pavement	No variation between the two cities
Smell	No variation
Tidiness	Only one deviating value
Other visitors	Not categorized
Colour of light	Not enough variation
Elevations	Not enough variation

After each regular item decision tree analysis, the same analysis is performed including the age of the consumers as independent variable as well. The conclusions that concern the age classification only cover the conclusions that distinguish from the previous conclusions regarding that certain item. The age classification is determined as follows, based on the literature review and the survey results:

1. Teenagers and young adults   14 – 25 years of age;
2. Adults   26 – 50 years of age;
3. Elderly   51 – 85 years of age.

The first decision tree analysis, 1.1 accessibility and distance to the nearest parking, comes with an figure (figure 6.2) that functions an example to show how a decision tree analysis output should be interpreted. The other decision trees can be found on the appendix disc. Each individual tree is given in a PDF file containing the file name that is equal to the item name (for example: 1.1 Accessibility and distance to the nearest parking).

1.1 Accessibility and distance to nearest parking

The dependent variable 'Accessibility' is likely to be dependent on:
- Distance to the nearest parking;
- Distance to the nearest public transport stop;
- Transport mode.

The accessibility is rated on 7-point Likert scale varying from very negative to very positive. The distance to the nearest parking and nearest public transport stop is measured from 0 meters to 350 respectively 400 meters. The options concerning transport mode consist of: by car, public transport, walking, bicycle and other. For the decision tree analysis, these options are limited to only car users concerning the distance to the nearest parking, and only public transport users when it concerns the distance to the nearest public transport stop.

Distance parking and car users
- The overall accessibility is rated fairly positive (21.9%), positive (38.6%) or very positive (24.0%).
- Respondents rate the accessibility more positive when the distance to the nearest parking is equal to or less than 100 meters; the overall ratings are positive (39.8%) and very positive (29.1%), compared to positive (37.7%) and very positive (20.1%) when the distance is more than 100 meters.
- The positive effect of the closer distance disappears when it over 275 meters; the overall ratings are positive (41.1%) and very positive (20.0%), compared to positive (36.0%) and very positive (20.2%) when the distance is equal to or less than 275 meters.
- However, respondents do rate the accessibility more positive when the distance to the nearest parking is equal to or less than 225 meters; the overall ratings are positive (36.1%) and very positive (22.2%), compared to positive (35.7%) and very positive (17.1%) when the distance is more than 225 meters.

The overall percentage correctly predicted is 38.6%.

For validation, another tree analysis is performed including the respondents arriving by other transport modes.

Figure 6.2; Decision tree accessibility (car)

Distance parking and car or other transport mode
- Respondents arriving by car rate the accessibility more positive when the distance to the nearest parking is equal to or less than 150 meters; the overall ratings are positive (39.4%) and very positive (29.3%), compared to positive (37.7%) and very positive (20.1%) when it is more than 150 meters.
- Respondents arriving by other transport mode, do not rate the accessibility more positive when it is equal to or less than 150 meters; the overall ratings are positive (31.5%) and very positive (30.1%), compared to positive (36.8%) and very positive (26.5%) when it is less than 150 meters.

The overall percentage correctly predicted is 36.8%.

<u>1.2 Accessibility and distance to nearest public transport stop</u>

Distance public transport stop and public transport users.
- The overall accessibility is rated fairly positive (23.2%), positive (33.8%) or very positive (28.7%).
- Respondents rate the accessibility more positive when the distance to the nearest public transport stop is equal to or less than 125 meters; the overall ratings are positive (31.6%) and very positive (34.2%), compared to positive (34.8%) and very positive (25.9%) when the distance is more than 125 meters.
- The positive effect of the closer distance disappears when it is equal to or less than 225 meters (but more than 125 meters), compared to over 225 meters; the overall ratings are positive (30.0%) and very positive (22.9%), compared to positive (38.6%) and very positive (28.4%) when the distance is equal to or less than 225 meters.

The overall percentage correctly predicted is 36.3%.

For validation, another tree analysis is performed including the respondents arriving by other transport modes.

Distance public transport stop and public transport or other transport mode
- Respondents arriving by public transport rate the accessibility more positive when it is equal to or less than 150 meters; the overall ratings are positive (32.7%) and very positive (33.6%), compared to positive (34.9%) and very positive (24.8%) when it is less than 150 meters.
- Respondents arriving by other transport mode also rate the accessibility more positive when the distance to the nearest public transport stop is equal to or less than 150 meters; the overall ratings are positive (38.5%) and very positive (27.5%), compared to positive (37.1%) and very positive (21.8%) when it is more than 150 meters.

This confirms the conclusion formulated above (Distance public transport and transport mode).
The overall percentage correctly predicted is 36.9%.

<u>1.3 Age and accessibility by car</u>

Distance parking and car users
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Distance parking'. To conclude: the respondent's age does not have the most influence on the results.
- When the distance to the nearest parking is equal to or less than 100 meters, respondents ranging from 51 to 85 of age rate the accessibility the most positive; the overall ratings are positive (38.9%) and very positive (35.2%), compared to positive (35.7%) and very positive (31.0%) for respondents ranging from 26 to 50 years of age, and positive (45.6%) and very positive (22.1%) for respondents ranging from 14 to 25 years of age.
- Forcing the respondent's age as first splitting variable shows that the oldest age class rate the accessibility more positive, disregarding the distance to the nearest parking; the overall ratings are positive (40.2%) and very positive (24.4%), compared to positive (37.8%) and very positive (23.8%) for the other two age classes.

The overall percentage correctly predicted is 38.8%.

<u>1.4 Age and accessibility using public transport</u>
Distance public transport stop and public transport users
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Distance public transport stop'. To conclude: the respondent's age does not have the most influence on the results.
- When the distance to the nearest public transport stop is equal to or less than 125 meters, respondents from 26 – 85 of age rate the accessibility the most positive; the overall ratings are positive (31.5%) and very positive (34.2%), compared to positive (37.6%) and very positive (18.8%) for respondents ranging from 14 to 25 years of age.

The overall percentage correctly predicted is 35.4%.

<u>2.1 Shop offer</u>
The dependent variable 'Shop's, which represents the shop offer, is likely to be dependent on:
- Fashion and luxury shops;
- Daily shops;
- Other shops.

The shop offer is rated on 7-point Likert scale varying from very negative to very positive. The independent variables indicate the amount of certain shop types.

Fashion and luxury shops, Daily shops and other.
- The overall shop offer is rated fairly positive (22.1%), positive (36.8%) or very positive (25.8%).
- The amount of fashion and luxury shops has the largest impact on the results and, therefore, functions as the first and second splitting variable.
- Respondents rate the shop offer more positive when the number of fashion and luxury shops is higher; the overall ratings are positive (28.0%) and very positive (22.6%), compared to positive (39.2%) and very positive (24.3%) when the amount is exceeding 15.
- The variable 'Daily shops' has less effect and 'Other shop's has no significant effect on the shop offer rating.

The overall percentage correctly predicted is 35.9%.

<u>2.2 Age and shop offer</u>
Fashion and luxury shops, Daily shops and other
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Fashion and luxury shops'. To conclude: the respondent's age does not have the most influence on the results.
- Respondents ranging from 14 to 25 years of age rate the shop offer more positive than the 26 – 85 age classes when the amount of fashion and luxury shops is larger than 10 but smaller than or equal to 15; the overall ratings are positive (30.2%) and very positive (17.0%), compared to positive (20.2%) and very positive (21.8%) at the age of 26 – 85 years.
- Respondents ranging from 26 to 85 years of age rate the shop offer more positive than the 14 – 25 age class when the amount of fashion and luxury shops is larger than 15; the overall ratings are positive (41.0%) and very positive (26.7%), compared to positive (36.1%) and very positive (20.2%) at the age of 14 -25 years.
- 'Daily shops' and 'Other shops' do not have sufficient influence on the results and, therefore, do not function as splitting variables.

- Forcing the respondent's age as first splitting variables, does also not lead to relevant conclusions for daily shops and other shop types.

The overall percentage correctly predicted is 36.5%.

3.1 Restaurants/leisure

The dependent variable 'Restaurants', which represents the offer of restaurants/leisure, is likely to be dependent on the independent variable 'Restaurants/leisure'.

The restaurant/leisure offer is rated on 7-point Likert scale varying from very negative to very positive. The independent variable indicates the amount of restaurants/leisure facilities.

Restaurants/leisure.
- The overall restaurants/leisure appreciation is neutral (16.6%), positive (28.9%) or very positive (22.9%).
- Respondents rate the restaurants/leisure offer more positive when the amount of restaurants/leisure facilities is higher; the overall ratings are positive (27.6%) and very positive (24.5%), compared to positive (35.0%) and very positive (26.2%) when the amount is exceeding 6.
- Respondents do not rate the restaurants/leisure offer more positive when the amount of restaurants/leisure facilities is higher than 17; the overall ratings positive (40.0%) and very positive (26.7%), compared to positive (30.3%) and very positive (25.7%) when the amount is exceeding 17.

The overall percentage correctly predicted is 29.1%.

3.2 Age and restaurants/leisure

Restaurants/leisure.
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Restaurants/leisure'. To conclude: the respondent's age does not have the most influence on the results.
- The decision tree without a forced first variable results gives no further useable results regarding age classes. Therefore, the variable 'Age classification' is forced to perform as first splitting variable.

The overall percentage correctly predicted is 30.1%.

Restaurants/leisure with forced first splitting variable
- Respondents ranging from 14 to 50 years of age rate the restaurants/leisure offer significantly more positive when the amount of restaurant/leisure facilities is larger than 6; the overall ratings are positive (38.8%) and very positive (24.5%), compared to positive (25.2%) and very positive (21.5%) when it is equal to or smaller than 6.
- Respondents ranging from 51 to 85 years of age are more positive when the amount of restaurants/leisure facilities is equal to or smaller than 3; the overall ratings are positive (33.5%) and very positive (23.4%), compared to positive (24.5%) and very positive (26.5%) when it is larger than 3.
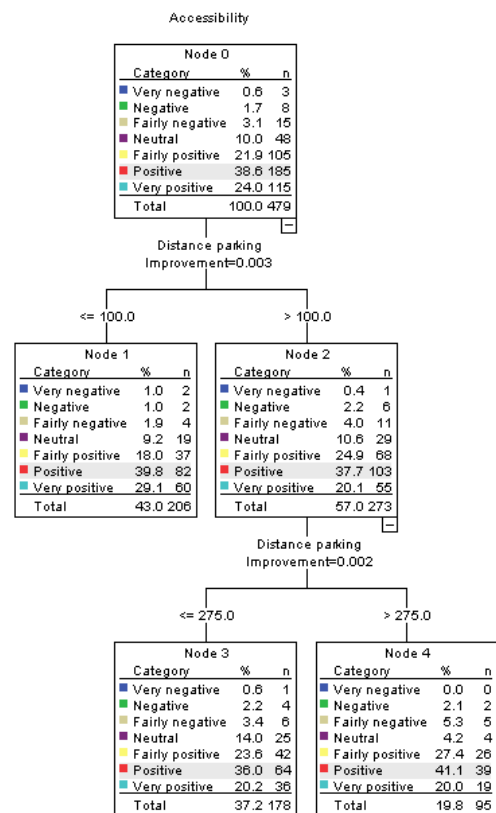
The overall percentage correctly predicted is 29.5%.

4.1 Shape facades

The dependent variable 'Shape facade's is likely to be dependent on:
- Shape of facades;
- Shop windows;
- Advertisement signs.

The shape of the facades is rated on 7-point Likert scale varying from very negative to very positive. The independent variables indicate the actual shape of the facades (diverse (historical)/clean and uniform), the conspicuousness of the shop windows and the conspicuousness of the advertisement signs (discrete/neutral/striking).

Shape of facades, shop windows and advertisement signs.
- The overall shape of the facades appreciation is fairly positive (19.0%), positive (30.2%) or very positive (26.4%).
- The actual shape of the facades has the largest impact on the results and, therefore, functions as the first splitting variable.
- Respondents rate the shape of the facades more positive when it is diverse (historical); the overall ratings are positive (34.1%) and very positive (36.7%), compared to positive (26.4%) and very positive (16.4%) when it is clean and uniform.
- The conspicuousness of the shop windows has the second largest impact on the results and, therefore, functions as the second splitting variable.
- In the diverse (historical) situation, respondents rate the conspicuousness of the shop windows more positive when it is discrete; the overall ratings are positive (35.7%) and very positive (52.4%), compared to positive (33.4%) and very positive (30.7%) when it is neutral. 'Striking' does not appear in this splitting variable.
- In the clean and uniform situation, respondents rate the conspicuousness of the shop windows more positive when it is neutral; the overall ratings are positive (32.2%) and very positive (20.0%), compared to positive (24.6%) and very positive (15.3%) when it is striking. 'Discrete' does not appear in this splitting variable.
- The conspicuousness of the advertisement signs has the least impact on the results. However, there is a significant impact and, therefore, it functions as the third splitting variable.
- Respondents rate the shape of the facades, in both diverse and clean and uniform appearance, more positive when the advertisement signs are discrete instead of neutral, or neutral instead of striking.

The overall percentage correctly predicted is 32.9%.

4.2 Age and shape facades
Shape facades, shop windows and advertisement signs.
- The age of the respondent functions as the third splitting variable and the first two splitting variables remain 'Shape of facades' and 'shop windows'. To conclude: the respondent's age does not have the most influence on the results.
- When the shape of the facades is clean and uniform and the shop windows are striking, respondents ranging from 14 to 50 years of age rate the shape of the facades more positive than the other two age classes; the overall ratings are positive (24.7%) and very positive (16.0%), compared to positive (24.1%) and very positive (12.7%) at the age of 51 – 85 years.
- When the shape of the facades is clean and uniform and the shop windows are neutral, respondents ranging from 26 to 85 years of age rate the shape of the facades more positive than respondents ranging from 14 to 25 years of age; the overall ratings are positive (35.0%) and very positive (25.0%), compared to positive (29.1%) and very positive (14.5%) at the age of 14 – 25 years.
- When the shape of the facades is diverse (historical) and the shop windows are neutral, respondents ranging from 26 to 85 years of age rate the shape of the facades more positive than respondents ranging from 14 to 25 years of age; the overall ratings are positive (39.0%) and very positive (31.0%), compared to positive (24.4%) and very positive (30.1%) at the age of 14 – 25 years.

- When the shape of the facades is diverse (historical) and the shop windows are discrete, respondents ranging from 51 to 85 years of age rate the shape of the facades more positive than respondents ranging from 14 to 50 years of age; the overall ratings are positive (36.1%) and very positive (57.4%), compared to positive (35.4%) and very positive (47.7%) at the age of 14 – 50 years.
- There are no relevant conclusions concerning the advertisement signs, which functions as the last splitting variable.

The overall percentage correctly predicted is 33.8%.

5.1 Material facades

The dependent variable 'Material of facades' is likely to be dependent on the independent variable 'Material of facades'.

The material of the facades is rated on 7-point Likert scale varying from very negative to very positive. The independent variable indicates actual material of the facades (historical/contemporary materials).

Material facades.
- The overall material of the facades appreciation is fairly positive (22.1%), positive (29.7%), or very positive (19.8%).
- Respondents rate the material of the facades more positive when it is historical; the overall ratings are positive (33.2%) and very positive (27.8%); compared to positive (26.4%) and very positive (12.2%) when it is contemporary.

The overall percentage correctly predicted is 29.7%.

5.2 Age and material facades

Material facades.
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Material of facades'. To conclude: the respondent's age does not have the most influence on the results.
- When the material of the facades is historical, respondents ranging from 51 to 85 years of age rate the material of the facades more positive than respondents from the other two age classes; the overall ratings are positive (38.5%) and very positive (29.7%), compared to positive (32.5%) and very positive (32.5%) at the age of 26 – 50 years, and with positive (27.5%) and very positive (22.2%) at the age of 14 – 25 years.
- This distinction between ages is not noticeable when it concerns contemporary material of facades.
- When the material of the facades is contemporary, respondents ranging from 51 to 85 years of age rate the material of the facades more negate than respondents from the other two age classes; the overall ratings are negative (6.5%) and very negative (6.5%), compared to negative (4.8%) and very negative (0.7%) at the age of 26 – 50 years, and with negative (3.2%) and very negative (1.4%) at the age of 14 – 25 years.

The overall percentage correctly predicted is 30.3%.

6.1 Material pavement

The dependent variable 'Material pavement' is likely to be dependent on the independent variable 'Material pavement'.

The material pavement is rated on 7-point Likert scale varying from very negative to very positive. The independent variable indicates actual material of the pavement (rough/smooth).

Material pavement.

- The overall material of the pavement appreciation is neutral (20.4%), fairly positive (23.7%) or positive (25.2%).
- Respondent's ratings indicate no clear preference for rough or smooth pavement materials; the overall ratings are positive (23.4%) and very positive (18.3%), compared to positive (25.8%) and very positive (10.8%) when it is smooth.

The overall percentage correctly predicted is 25.2%.

The reason for the lack of a preference may be that there is no variance in pavement materials in 's-Hertogenbosch, since each of the four locations contain smooth pavement materials. However, Maastricht has two locations with smooth pavements, and two locations with rough pavements. Therefore, another decision tree analysis is performed only for the city of Maastricht

Material pavement only in Maastricht

- Respondents rate the material of the pavement more positive when it is rough; the overall ratings are positive (23.4%) and very positive (18.3%); compared to positive (21.0%) and very positive (11.3%) when it is smooth.

The overall percentage correctly predicted is 23.5%.

Implementing gender in the analysis will probably result in a different outcome. Females are likely to rate the pavement less positive when it is rough since that decreases the ease of walking when they are wearing shoes with heals. Therefore, the same analysis is performed with 'Gender' as an additional independent variable.

Material pavement only in Maastricht and gender.

- Gender has the largest impact on the results and, therefore, functions as the first splitting variable.
- Female respondent's ratings indicate no clear preference for rough or smooth pavement materials; the overall ratings are fairly positive (19.9%), positive (20.5%) and very positive (13.0%); compared to fairly positive (20.1%), positive (19.0%) and very positive (11.5%) when it is smooth.
- Male respondents rate the material of the pavement more positive when it is rough; the overall ratings are positive (28.1%) and very positive (27.0%), compared to positive (26.6%) and very positive (10.9%) when it is smooth.

The overall percentage correctly predicted is 26.0%.

6.2 Age and material pavement

Material pavement only in Maastricht

- The age of the respondent functions as the first splitting variable. Therefore, the age has more influence on the respondent's ratings in comparison with the other variables. The node distinguishes the classification 14 to 25 years as one node, and 26 to 50; 51 to 85 years as another.
- Respondents of all age classes rate the material of the pavement more positive when it is rough, to conclude:
- Respondents ranging from 14 to 25 years of age rate the material of the pavement more positive when it is rough; the overall ratings are positive (25.0%) and very positive (17.1%), compared to positive (20.2%) and very positive (6.4%) when it is smooth.
- Respondents ranging from 26 to 50 years of age rate the material of the pavement more positive when it is rough; the overall ratings are positive (23.1%) and very positive (21.2%), compared to positive (24.7%) and very positive (16.4%) when it is smooth.

- Respondents ranging from 51 to 85 years of age rate the material of the pavement more positive when it is rough; the overall ratings are positive (22.4%) and very positive (17.8%), compared to positive (17.9%) and very positive (14.3%) when it is smooth.

The overall percentage correctly predicted is 25.2%.

7.1 Colour facades

The dependent variable 'Colour facade's is likely to be dependent on the independent variable 'Colour facade's.

The colour of the facades is rated on 7-point Likert scale varying from very negative to very positive. The independent variable indicates actual colour of the facades (dark/mixed/bright).

Colour facades.
- The overall colour of the facades appreciation is neutral (20.8%), fairly positive (24.3%) or positive (23.6%).
- The actual colour of the facades has the largest impact on the results when it is split into 'Mixed' as one node, and 'Bright; Dark' as another node. This functions as the first splitting variable.
- Respondents rate the colour of the facades more positive when it is mixed; the overall ratings are positive (29.2%) and very positive (19.2%), compared to positive (18.3%) and very positive (9.0%) when it is bright or dark.
- Considering the node 'Bright; Dark', resulting in the second splitting variable, respondents rate the colour of the facades more positive when it is bright; the overall ratings are neutral (23,0%), fairly positive (25,9%), positive (19.7%) and very positive (10%), compared to neutral (25,7%), fairly positive (22,0%), positive (17.0%) and very positive (7.8%) when it is dark.

The overall percentage correctly predicted is 27.3%.

7.2 Age and colour facades

Colour facades.
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Shape of facades'. To conclude: the respondent's age does not have the most influence on the results.
- Respondents ranging from 14 to 25 years of age rate the colour of the facades more positive when it is mixed; the overall ratings are positive (26.8%) and very positive (12.4%), compared to positive (19.8%) and very positive (8.5%) when it is dark, and positive (13.3%) and very positive (6.4%) when it is bright.
- Respondents ranging from 26 to 50 years of age rate the colour of the facades more positive when it is mixed; the overall ratings are positive (31.6%) and very positive (21.1%), compared to positive (24.7%) and very positive (12.3%) when it is bright, and positive (9.7%) and very positive (5.6%) when it is dark.
- Respondents ranging from 51 to 85 years of age rate the colour of the facades more positive when it is mixed; the overall ratings are positive (29.7%) and very positive (23.6%), compared to positive (25.0%) and very positive (14.3%) when it is bright, and positive (21.2%) and very positive (9.6%) when it is dark.

The overall percentage correctly predicted is 27.8%.

8.1 Amount of light

The dependent variable 'Amount of light' is likely to be dependent on:
- Amount of light;

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- Weather;
- Indoor/outdoor.

The amount of light is rated on 7-point Likert scale varying from very negative to very positive. The independent variables indicate the actual amount of light (low/average/high), the weather (cloudy/partially cloudy/sunny) and indoor (indoor/outdoor).

Amount of light.
- The first splitting variable distinguishes 'Average' as one node, and 'High; Low' as another.
- The seconds splitting variable distinguishes 'High' and 'Low'. Respondents rate the amount of light more positive when it is low; the overall ratings are positive (49.6%) and very positive (20.9%), compared to positive (37.9%) and very positive (22.0%) when it is high.

The overall percentage correctly predicted is 37.0%

Amount of light, Weather, Indoor/outdoor.
- Including the indoor/outdoor variable in the same analysis as displayed above, results in 'Weather' functioning as the second splitting variable.
- There is no clear effect of the weather on the rating of the amount of light; the overall results are positive (38.0%) and very positive (22.5%), compared to positive (52.3%) and very positive (17.0%) when it is cloudy.

The overall percentage correctly predicted is 37.0%

8.2 Age and amount of light

Amount of light, Weather, Indoor/outdoor.
- Since the age of the respondent functions as the last splitting variable, there are no relevant conclusions in the decision tree without forced variables. Forcing age as the first splitting variable also results in no relevant conclusions.

The overall percentage correctly predicted is 37.0%.

9.1 Background noise

The dependent variable 'Background noise' is likely to be dependent on:
- Background noise;
- Crowdedness;
- Music.

The background noise is rated on 7-point Likert scale varying from very negative to very positive. During the survey value options were given for background noise (low, average and high), crowdedness (quiet, average and crowded) and music (no or yes).

Background noise, crowdedness and music.
- The overall appreciation of background noise is mostly neutral (29.6%), fairly positive (23.6%) or positive (21.7%).
- The background noise has the largest impact on the results and, therefore, functions as the first splitting variable.
- Respondents rate the background noise more positive when it is low; the overall ratings are fairly positive (20.6%), positive (26.2%) and very positive (23.0%), compared to fairly positive (24.1%), positive (21.0%) and very positive (10.7%) when it is average or high.

- Concerning the node 'Low background noise', the crowdedness functions as the splitting variable. Respondents rate the background noise more positive when the crowdedness is quiet or average; the overall ratings are fairly positive (22.0%), positive (28.0%) and very positive (32.0%), compared to fairly positive (19.7%), positive (25.0%) and very positive (17.1%) when it is crowded.
- Concerning the node 'Average; High background noise', the music functions as the splitting variable. Respondents rate the background noise more positive when there is music present; the overall ratings are fairly positive (25.1%), positive (26.6%) and very positive (12.7%), compared to fairly positive (23.5%), positive (17.1%) and very positive (9.4%) when it is absent.

The overall percentage correctly predicted is 31.9%.

9.2 Age and background noise

Background noise, crowdedness and music.
- Since the age of the respondent functions as the last splitting variable, there are no relevant conclusions in the decision tree without forced variables. Forcing age as the first splitting variable also results in no relevant conclusions. Therefore, a decision tree analysis is performed using only the two variables age and background noise.

The overall percentage correctly predicted is 31.6%.

Background noise.
- There is no splitting variable when the background noise is low, and when the age class is 26-50. The conclusions are therefore limited to average and high and the age classes 14 – 25 and 51 – 85.
- Respondents ranging from 14 to 25 years of age rate the background noise slightly more positive when it is high; the overall ratings are positive (25.5%) and very positive (9.1%), compared to positive (21.0%) and very positive (11.4%) when it is average.
- Respondents ranging from 26 to 50 years of age show no clear preference for average or high background noise; the overall ratings are positive (20.9%) and very positive (8.1%), compared to positive (18.4%) and very positive (10.5%) when it is high.
- Respondents ranging from 51 to 85 years of age rate the background noise slightly more positive when it is high; the overall ratings are positive (18.9%) and very positive (18.9%), compared to positive (19.9%) and very positive (10.8%) when it is average.

The overall percentage correctly predicted is 30.2%.

10.1 Music

The dependent variable 'Music' is likely to be dependent on the independent variable 'Music'. The music is rated on 7-point Likert scale varying from very negative to very positive. The independent variable indicates that at the time of the survey no music was played.

Music.
- The overall rating results concerning music are mostly neutral (47.5%), fairly positive (16.0%), positive (11.5%). In this rating, there is a distinction between the presence (n=304) or absence (n=532) of music.
- Respondent's ratings indicate no clear preference but there is a tendency for the presence of music. When music is present, the overall ratings are neutral (38.2%), fairly positive (19.4%), positive (17.4%) when no music is present, the overall ratings are neutral (52.8%), fairly positive (14.1%), positive (8.1%).

The overall percentage correctly predicted is 47.5%.

10.2 Age and music
Music.
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Music'. To conclude: the respondent's age does not have the most influence on the results.
- Respondents ranging from 14 to 25 years of age rate the music more positive when it is present; the overall ratings are positive (17.8%), very positive (16.1%) and very negative (4.2%), compared to positive (10.0%), very positive (5.2%) and very negative (10.5%) when it is absent.
- Respondents from 26 – 51 years of age rate the music more positive when it is present; the overall ratings are positive (16.0%) and very positive (6.7%), compared to positive (6.6%) and very positive (6.6%) when it is absent.
- Respondents ranging from 51 to 85 years of age rate the music more positive when it is present; the overall ratings are positive (18.0%) and very positive (8.1%), compared to positive (6.6%) and very positive (7.9%) when it is absent.

The overall percentage correctly predicted is 47.5%.

11.1 Indoor/ outdoor
The dependent variable 'Indoor/outdoor' is likely to be dependent on the independent variable 'Indoor/ outdoor'. The indoor/outdoor is rated on 7-point Likert scale varying from very negative to very positive.

Indoor/outdoor.
- The overall indoor/outdoor is mostly neutral (27.9%), fairly positive (19.5%), positive (25.8%), and very positive (17.2%) when it is concerns indoor. In this rating, there is no distinction between the indoor (n=230) or outdoor (n=688) of situations.
- Respondents ratings indicate a preference for an outdoor location; the overall ratings are neutral (26.3%), positive (28.1%), and very positive (17.9%), compared to neutral (32.6%), fairly positive (24.8%), positive (19.1%) for an indoor location.

The overall percentage correctly predicted is 29.2%.

11.2 Age and indoor/ outdoor
Indoor/outdoor.
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Indoor/outdoor'. To conclude: the respondent's age does not have the most influence on the results.
- Respondents ranging from 14 to 25 years of age rate the indoor/outdoor more positive when the concerning shopping area is an outdoor location; the overall ratings are positive (24.3%) and very positive (17.8%), compared with positive (20.0%) and very positive (11.8%) when it concerns an indoor situation. For this age class, the amount of fairly positive answers is higher for the indoor situation.
- Respondent's from 26 – 50 years indicate no clear preference for an indoor or outdoor situation; the overall ratings are fairly positive (16.5%), positive (33.5%) and very positive (13.4%), compared to fairly positive (24.6%), positive (16.9%) and very positive (20.0%) when it concerns an indoor situation.
- Respondents ranging from 51 to 85 years of age rate the indoor/outdoor more positive when the concerning shopping area is an outdoor location; the overall ratings are positive (27.7%) and very positive (21.7%), compared to positive (20.0%) and very positive (16.4%) when it concerns an indoor situation.

The overall percentage correctly predicted is 30.1%.

12.1 Greenery

The dependent variable 'Greenery' is likely to be dependent on the independent variable 'Greenery'. The greenery is rated on 7-point Likert scale varying from very negative to very positive. During the inventory of the survey locations the amounts of greenery were taken in account.

Greenery.
- The overall greenery is mostly neutral (23.6%), fairly negative (18.7%), negative (15.9%). In this rating, there is no distinction between the presence (n=350) or absence (n=568) of greenery.
- Respondents ratings indicate a clear preference for the presence of greenery in the shopping environment; the overall ratings are fairly positive (18.3%), positive (15.1%) and very positive (6.9%), compared to fairly positive (11.8%), positive (6.0%) and very positive (3.2%) when it is absent.
- The overall conclusion is that the respondents are more positive when greenery is present at the survey locations. However, although it is the last splitting variable, respondents rate the greenery more positive when it is present but when the amount is smaller than or equal to 8, compared to an amount lager than 8 but smaller than or equal to 17.

The overall percentage correctly predicted is 25.2%.

12.2 Age and greenery
Greenery.
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Greenery'. To conclude: the respondent's age does not have the most influence on the results.

Since the amount of greenery in the resulting splitting variables differs with each age class, a dummy variable is created to ensure that each age class uses an comparable splitting variable. The most common amount of greenery in the current splitting variable is 0.5, therefore the dummy indicates whether there is greenery present or not.

Greenery using a dummy variable
- Respondents ranging from 14 to 25 years of age rate this variable more negative when there is no greenery present; the overall ratings are negative (19.4%) en very negative (16.9%), compared to negative (13.4%) and very negative (7.9%) when it is present.
- Respondents ranging from 26 to 50 years of age rate this variable more negative when there is no greenery present; the overall ratings are negative (18.9%) en very negative (18.3%), compared to negative (18.9%) and very negative (7.8%) when it is present.
- Respondents ranging from 51 to 85 years of age rate this variable more negative when there is no greenery present; the overall ratings are negative (17.8%) en very negative (14.0%), compared to negative (3.8%) and very negative (9.0%) when it is present.

The overall percentage correctly predicted is 24.1%.

13.1 Furniture

The dependent variable 'Furniture' is likely to be dependent on the independent variable 'Furniture'. The furniture is rated on 7-point Likert scale varying from very negative to very positive. The independent variable indicates actual presence of furniture (yes/no).

Furniture.

- The overall furniture appreciation is mostly neutral (28.4%), fairly negative (20.2%) or fairly positive (14.8%). In this rating, there is no distinction between the presence or absence of furniture.
- Respondents rate the furniture more positive when it is present; the overall ratings are neutral (24.3%), fairly positive (25.2%) and positive (21.7%), compared with neutral (29.0%), fairly positive (13.3%) and positive (8.5%) when it is absent.

The overall percentage correctly predicted is 28.5%.

13.2 Age and furniture

Furniture.
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Furniture'. To conclude: the respondent's age does not have the most influence on the results.
- Since there are no further splitting variables when there is furniture present, there is no comparison possible concerning the age of the respondent. Forcing the age as first splitting variable gives the same result. Therefore, only the following conclusions can be drawn:
- When there is no furniture present, respondent's ratings are the least negative in the age class from 51 – 85 year; the overall ratings are negative (12.9%) and very negative (9.5%), compared to negative (14.2%) and very negative (12.4%) for the age class 26 – 50 years, and negative (15.0%) and very negative (8.6%) for the age class 14 – 25 years.

The overall percentage correctly predicted is 28.5%.

14.1 Shop windows

The dependent variable 'shop windows' is likely to be dependent on:
- Shop windows;
- Advertisement signs.

The shop windows are rated on 7-point Likert scale varying from very negative to very positive. The independent variables indicate the actual conspicuousness of the shop windows and the conspicuousness of the advertisement signs (discrete/neutral/striking).

Shop windows and advertisement signs.
- The overall shop windows appreciation is neutral (18.5%), fairly positive (30.4%) and positive (29.8%).
- The actual conspicuousness of the shop windows has the largest impact on the results and, therefore, functions as the first splitting variable.
- Respondents rate the shop windows more positive when it is discrete; the results are fairly positive (16.7%), positive (33.3%) and very positive (31.7%), compared to fairly positive (32.6%), positive (29.3%) and very positive (9.5%) when it is neutral or striking.
- The node 'Discrete' results in no further splitting variables.
- The conspicuousness of the advertisement signs has the second largest impact on the results and, therefore, functions as the second splitting variable (for the node 'Neutral; Striking').
- In the neutral and striking shop windows situation, respondents rate the conspicuousness of the advertisement signs more positive when it is neutral or discrete; the overall ratings are fairly positive (32.4%), positive (30.9%) and very positive (10.0%), compared to fairly positive (33.9%), positive (19.3%) and very positive (6.4%) when it is striking.

The overall percentage correctly predicted is 32.8%.

14.2 Age and shop windows

Shop windows and advertisement signs.

- The only relevant conclusion that can be drawn is that respondents from 14 – 25 and 51 – 85 years of age rate the shop windows more positive when they are discrete; the overall ratings are positive (34.1%) and very positive (29.7%), compared to positive (30.5%) and very positive (9.9%) when they are neutral or striking.
- There are no further splitting variables with interesting conclusions or that make it possible to compare age classes among each other.

The overall percentage correctly predicted is 34.5%.

15.1 Advertisement signs

The dependent variable 'Advertisement sign's is likely to be dependent on the independent variable 'Advertisement sign's. The advertisement signs are rated on 7-point Likert scale varying from very negative to very positive. The independent variable indicates actual conspicuousness of the advertisement signs (discrete/neutral/striking).

Advertisement signs.

- The overall advertisement signs appreciation is mostly neutral (34.9%), fairly positive (25.8%) or positive (17.4%).
- Respondents rate the shop windows more positive when it is neutral or discrete; the overall ratings are neutral (34.7%), fairly positive (25.8%) and positive (18.3%), compared to neutral (35.8%), fairly positive (25.7%) and positive (11.0%) when it is striking.
- In the neutral and discrete advertisement signs situation, respondent's ratings indicate no clear preference for neutral or discrete advertisement signs; the overall ratings are neutral (33.3%), fairly positive (26.1%), positive (19.4%) and very positive (6.8%), compared to neutral (36.4%), fairly positive (25.5%), positive (17.0%) and very positive (10.1%) when it is mixed.

The overall percentage correctly predicted is 34.9%.

15.2 Age and advertisement signs

Advertisement signs.

- The age of the respondent functions as the first splitting variable. Therefore, the age has more influence on the respondent's ratings in comparison with the other variables. The node distinguishes the classification 14 – 25; 26 – 50 and 51 – 85 years.
- There are no further splitting variables with interesting conclusions or that make it possible to compare age classes among each other. Forcing the variable 'Advertisement sign's as first splitting variable leads to a more relevant result.

The overall percentage correctly predicted is 34.9%.

Advertisement signs with forced first splitting variable.

- The first splitting variable 'Advertisement sign's distinguishes the nodes 'Neutral; Discrete' and 'Striking'. There are only splitting variables concerning age for the first node.
- Respondents ranging from 14 to 25 years of age rate the advertisement signs slightly more positive when they are discrete; the overall ratings are positive (17.6%) and very positive (8.1%), compared to positive (18.3%) and very positive (4.2%) when they are neutral.
- Respondents from 26-50 years of age rate the advertisement signs slightly more negative when they are neutral; the overall ratings are negative (6.3%) and very negative (2.7%), compared to negative (4.3%) and very negative (0.9%) when they are discrete.

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- Respondents from 51 – 85 years of age rate the advertisement signs more positive when they are discrete; the overall ratings are positive (21.1%) and very positive (12.3%), compared to positive (19.7%) and very positive (8.5%) when they are neutral.

The overall percentage correctly predicted is 35.0%.

16.1 Width street

The dependent variable 'Width street' is likely to be dependent on:
- Width street;
- Crowdedness;
- Width to height ratio.

The width of the street is rated on 7-point Likert scale varying from very negative to very positive. The independent variables indicate the actual with of the street, the crowdedness (quiet/average/crowded) and the width to height ratio (numerically, width divided by the amount of storeys).

Width street, crowdedness and width to height ratio
- The overall width of the street appreciation is fairly positive (24.1%), positive (38.9%) or very positive (21.8%).
- The actual width of the street has the largest impact on the results and, therefore, functions as the first splitting variable.
- Respondents ratings indicate clear preference for the width of the street; the overall ratings are fairly positive (16.7%), positive (31.0%) and very positive (27.8%), compared to fairly positive (25.3%), positive (40.2%) and very positive (20.8%) when it is wider than 6.5 meters.
- The crowdedness has the second largest impact on the results and, therefore, functions as the second splitting variable.
- In the situation with a width of equal to or less than 6.5 meters, respondents rate the width of the street more positive when the crowdedness is average or quiet; the overall rating results are fairly positive (16.0%), positive (42.0%) and very positive (30.0%), compared to fairly positive (17.1%), positive (23.7%) and very positive (26.3%) when it is crowded.
- The node 'Crowdedness' in the equal to or less than 6.5 meters situation, results in no further splitting variables.
- In the situation with a width of more than 6.5 meters, respondents ratings indicate no clear preference for the crowdedness, the overall ratings are fairly positive (25.4%), positive (36.6%) and very positive (25.2%) when it is average, compared to fairly positive (25.1%), positive (43.6%) and very positive (16.5%) when it is quiet or crowded.
- The width to height ratio has the third largest impact on the results and, therefore, functions as the third splitting variable.

The overall percentage correctly predicted is 39.1%.

16.2 Age and width street

Width street, crowdedness and width to height ratio
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Width of the street'. To conclude: the respondent's age does not have the most influence on the results.
- When the width of the street is equal to or less than 6.5 meters, respondents ranging from 51 to 85 years of age, rate the width of the street more positive than respondents ranging from 14 to 50 years of age; the overall ratings are positive (41.0%) and very positive (31.1%), compared to positive

(21.5%) and very positive (24.6%) when it is more than 6.5 meters. For this nodes, there are no further splitting variables.

- Respondents ranging from 14 to 25 years of age are on average more positive when the width of the street increases.
- Respondents ranging from 26 to 50 years of age are on average more negative when the width of the street increases. However, this effect is less perceptible compared to the respondents ranging from 51 to 85 years of age.
- The crowdedness functions as the second splitting variable when the width of the street is more than 6.5 meters.
- The width to height ratio functions as the third splitting variable. When the crowdedness is crowded or quiet and the width to height ratio is more than 3.5, respondents ranging from 26 to 50 years of age rat the width of the street the most positive compared to the other two age classes.
- When the crowdedness is crowded or quiet and the width to height ratio is smaller than or equal to 3.5, respondents ranging from 26 to 85 years of age rat the width of the street the most positive compared to the younger age class. Note the more positive appreciation concerning the 26 to 50 age class in both situations when the width to height ratio is smaller than or equal to 3.5, or larger than 3.5
- The width to height ratio in the situation when the crowdedness is average, does not result in relevant conclusions concerning age.

The overall percentage correctly predicted is 39.1%.

17.1 Height buildings
The dependent variable 'height buildings' is likely to be dependent on:
- Height buildings;
- Width of the street;
- Width to height ratio.

The height of the buildings is rated on 7-point Likert scale varying from very negative to very positive. During the survey value options were given for height of buildings (actual dimensions), width of the street (actual dimensions) and the width to height ratio.

Height buildings, width of the street, width to height ratio
- The overall appreciation of height buildings is mostly positive (35.8%), fairly positive (24.0%) or neutral (18.5%).
- The width of the street has the largest impact on the results and, therefore, functions as the first splitting variable.
- The splitting variable width of the street shows that the most significant percentage differences are at a width of less or more than 6.5 meters. Respondents rate the height of the buildings more positive when the width of the street is equal to or smaller than 6.5 meters, the overall ratings are positive (31.7%) and very positive (34.9%), compared to positive (36.5%) and very positive (14.9%) when it is more than 6.5 meters.
- Concerning the node with a width of the street more than 6.5 meters, the height of the buildings functions as the splitting variable. Respondents rate the height of the buildings more positive when it is larger than 3.5 storeys; the overall ratings are positive (43.7%) and very positive (16.1%), compared to positive (30.9%) and very positive (14.0%) when it is equal to or less than 3.5 storeys.
- The width to height ratio has no significant influence on the results.

The overall percentage correctly predicted is 37.3%.

17.2 Age and height buildings
Height buildings, width of the street, width to height ratio.
- The age of the respondent functions as the fourth splitting variable and the three splitting variable before remain 'width of the street' and 'height buildings' (twice). There are no relevant conclusions concerning the respondent's age. Therefore, the age of the respondent is forced to function as the first splitting variable.

The overall percentage correctly predicted is 37.8%.

Height buildings etc. with forced first splitting variable.
- Respondents ranging from 14 to 50 years of age rate the height of the buildings more positive when it is higher than 3.5 meters; the overall ratings are positive (43.9%) and very positive (16.7%), compared to positive (30.1%) and very positive (17.5%) when it is equal to or less than 3.5 meters.
- Respondents ranging from 51 to 85 years of age rate the height of the buildings more positive when the width to height ratio is equal to or smaller than 4.5; the overall ratings are positive (40.2%) and very positive (23.0%), compared to positive (27.9%) and very positive (8.1%) when it is larger than 4.5.

The overall percentage correctly predicted is 37.9%.

18.1 Width to height ratio
The dependent variable 'height buildings' is likely to be dependent on:
- Width to height ratio;
- Width of the street;
- Height of buildings.

The width-height ratio is rated on 7-point Likert scale varying from very negative to very positive. During the survey value options were given for width of the street (actual dimensions), height of the buildings (actual dimensions) and the width to height ratio.

Width to height ratio, width of the street, height of buildings.
- The overall appreciation of width to height ratio is neutral (18.5%), fairly positive (25.1%) and positive (33.3%).
- The width of the street has the largest impact on the results and, therefore, functions as the first splitting variable.
- The splitting variable width of the street shows that the most significant differences are at a width of less or more than 6.5 meters. Respondents rate the width to height ratio more positive when the width of the street is equal to or less than 6.5 meters; the overall rating results are positive (31.0%) and very positive (33.3%), compared to positive (33.7%) and very positive (15.2%) when it is larger than 6.5 meters.
- Concerning the node more than 6.5 meters, the width to height ratio functions as the splitting variable. Respondents rate the width to height ratio more positive when it is equal to or smaller than 3.5; the overall ratings are positive (40.4%) and very positive (15.2%); compared to positive (28.9%) and very positive (15.1%) when it is larger than 3.5.
- Concerning the node with a width to height ratio larger than 3.5, the width to height ratio functions as the splitting variable. Respondents rate a value equal to or smaller than 4.5 meters as more positive.

The overall percentage correctly predicted is 34.5%.

18.2 Age and with-height ratio

Width to height ratio, width of the street, height of buildings.

- The age of the respondent functions as the third splitting variable and the two splitting variable before remain 'Width-height ratio'. There are no relevant conclusions concerning the respondent's age. Therefore, the age of the respondent is forced to function as the first splitting variable.

The overall percentage correctly predicted is 34.5%.

Width to height ratio etc. with forced first splitting variable.

- Forcing age as the first splitting variable, splits this variable in the nodes 14 – 25 and 26 – 50; 51 – 85 years. The 14 – 25 age class has no splitting variables.
- Respondents ranging from 26 to 85 years of age rate the width to height ratio more positive when the width of the street is larger than 6.5 meters; the overall rating results are positive (35.3%) and very positive (15.0%), compared to positive (28.1%) and very positive (35.4%) when it is equal to or less than 6.5 meters.

The overall percentage correctly predicted is 35.2%.

19.1 Crowdedness

The dependent variable 'Crowdedness' is likely to be dependent on:

- Crowdedness;
- Width of the street;
- Height of buildings.

The crowdedness is rated on 7-point Likert scale varying from very negative to very positive. During the survey value options were given for crowdedness (quiet, average or crowded) and width of the street (actual dimensions).

Crowdedness.

- The overall appreciation of crowdedness is neutral (22.3%), fairly positive (26.8%) and positive (32.6%).
- The width of the street has the largest impact on the results and, therefore, functions as the first splitting variable.
- Respondents rate the crowdedness more positive when the width of the street is equal to or less than 6.5 meters; the overall ratings are positive (29.4%) and very positive (28.6%), compared to positive (33.1%) and very positive (10.0%) when it is more than 6.5 meters.
- Concerning the node equal to or less than 6.5 meters, the crowdedness functions as the splitting variable. Respondents rate the crowdedness more positive when it is average or quiet instead of crowded.
- The variable height of buildings proved not to be of any significance.

The overall percentage correctly predicted is 34.0%.

19.2 Age and crowdedness

Relevant conclusions; Crowdedness.

- The age of the respondent functions as the third splitting variable and the two splitting variable before remain 'Width-height ratio'. There are no relevant conclusions concerning the respondent's age. Therefore, the age of the respondent is forced to function as the first splitting variable.

The overall percentage correctly predicted is 34.4%.

Relevant conclusions; Crowdedness with splitting variable.
- Forcing age as the first splitting variable, splits this variable in the ages 14 to 25; 26 to 50 as one node, and 51 to 85 years as another. The 51 – 85 age class has no splitting variables.
- For the 14 – 50 age categories, the width of the street functions as the second splitting variable. Respondents rate the crowdedness slightly more positive when the width of the street is equal to or less than 6.5 meters; the overall ratings are positive (18.5%) and very positive (27.7%), compared to positive (31.8%) and very positive (9.4%) when it is larger than 6.5 meters.

The overall percentage correctly predicted is 34.6%.

6.3.1 Conclusions decision tree analysis

Transportation mode
Respondents visiting the shopping area by car rate the accessibility of a particular location in the shopping area more positive when the distance to the nearest parking is equal to or less than 100 meters. Taking age classes into account, this is particularly noticeable for the respondents in the 51 – 85 age class. However, when the nearest parking is further away, it are the youngsters (aged 14 – 25) who provide the most negative ratings. This effect is, as expected, not noticeable for respondents using other transport methods. A short distance to the nearest public transport stop has a positive effect on the appreciation of the accessibility for both respondents arriving by public transport or other transport modes, including respondents arriving by car. There is no clear distinction between rating results concerning different age groups.

Offer
The fashion and luxury shop offer has a significant positive influence on the appreciation of the shop offer since respondents rate the shop offer more positive when the amount of fashion and luxury shops increases. Compared to the older respondents, respondents ranging from 14 to 25 years of age rate the offer more positive when the amount of fashion and luxury shops increases. However, when the amount continues to grow and exceeds the number of 15 shops, respondents ranging from 26 to 85 years of age rate the offer more positive. Daily shops and other shops have respectively very little and no significant influence.
The offer of restaurant/leisure facilities is rated highest if the amount of restaurants/leisure facilities in a certain shopping area is between 6 and 17. Especially the respondents ranging from 14 to 50 years of age appreciate the larger number of restaurant/leisure facilities.

Appearance
Distinguishing indoor and outdoor locations, the respondents' ratings indicate a clear preference for a outdoor location. However, the preference is not measured for the middle age class ranging from 26 to 50 years of age. The weather circumstances during the surveying days were good since there were three sunny days, one partially clouded day and one clouded day. There were no rainy days.
The shape of the facades is appreciated more positive when it is diverse (historical) instead of clean and uniform. In the case of a diverse (historical) appearance, respondents prefer a discrete conspicuousness of shopping windows. This positive effect is particularly valid for the older respondents (ranging from 51 to 85 years of age). When the shape of the facades is clean and uniform, respondents show a preference for shop windows with a neutral conspicuousness. The preference for this combination is mainly noticeable for the age classes ranging from 26 to 85 years. The younger class prefers a striking conspicuousness of the shop windows when the shape of the facades is clean and uniform. Excluding the actual shape of the facades and examining only the shop windows with advertisement signs as an added variable, respondents are more positive when the conspicuousness of both the shop windows

and the advertisement signs is discrete. For advertisement signs as an individual examined item, the results are similar. Compared to the two characteristics mentioned before, the advertisements signs have the least influence on the respondent's ratings of the shape of the facades. In both diverse (historical) and clean and uniform situations, respondents prefer discrete advertisement signs.

The preference concerning the material of the facades is in line with the shape of the facades since respondents, especially the oldest group, prefer historical materials. Moreover concerning age, the oldest group rate the material of the facades more negative than the younger two age groups when it is contemporary. For all age classes, the colour of the facades is rated more positive when it is mixed instead of only bright or dark. When the options are limited to only bright and dark, there is a preference for bright colours.

The material of the pavements is appreciated more positive when it is rough, this conclusion applies to all age classes and notably for the youngest. This type of pavements were mainly found in the historical shopping areas. Linking the gender of the respondent to the appreciation of the pavement material removes the preference of rough materials for female respondents. However, the results concerning females also indicate no preference for smooth pavement materials. This obviously results in the fact that males show a clear preference for rough materials.

Environment

Background noise itself seems to be the most important characteristics for the appreciation of the actual background noise. The results are more positive when the level of background noise is low. On locations with low background noise, respondents prefer a quiet or average crowdedness. Music was only present at locations where the background noise was average or high, and had a positive effect on the respondent's ratings. The age classes only showed significant differences in ratings when analysing only the actual background noise. The age classes ranging from 14 to 25 and 51 to 85 years of age indicate a slight preference for high background noise. Respondents ranging from 26 to 50 years of age show no clear preference. Investigations regarding only the absence or presence of music at the location, resulted in a slight preference for the presence of music. This counts for all age classes. Examining the presence of greenery shows that it has a positive influence, for all age classes, when it is present. This is also the case for furniture when it is present. This analysis cannot measure the preference for the age classes concerning the presence of furniture since the age classes indicate no differences. Concerning the amount of light, respondents are more positive when the lightness is low.

Dimensions

The decision tree analysis concerning the width of the street, implementing the actual width of the street, the crowdedness and the width to height ratio, proves that the width of the street has the largest impact on the results. Respondents prefer a width equal to or smaller than 6.5 meters. This is particularly the case when respondents are between 51 and 85 years of age. The younger respondents (ranging from 14 to 25 years of age) rate the width of the street more positive when it increases. When the width is no more than 6.5 meters, the crowdedness, for all age classes, is the most important influencing characteristic and leads to better results when it is average or quiet compared to crowded. The width to height ratio seems to be of least importance.

The dependent variables height of the buildings and the width to height ratio are both separately linked to the independent variables height of the buildings, width of the street and width to height ratio. In both cases, the width of the street has the most influence and, again, there is a strong preference for a width equal to or smaller than 6.5 meters. Concerning the appreciation of the height of the buildings when the width of the street is more than 6.5 meters, the actual height of the buildings functions as the most important variable and results in a more positive appreciation when the buildings are higher than 3 storeys. Distinguishing the age classes, respondents aged 14 to 50 years rate the height of the

buildings more positive when it is higher than 3 storeys. Meanwhile, respondents ranging from 51 to 85 years of age rate this height more positive when the width to height ratio is equal to or smaller than 3.5. The width to height ratio ratings, disregarding the age classes, appears to be of significant influence when the width of the street is more than 6.5 meters. In that case, respondents prefer a width to height ratio equal to or smaller than 3.5 (this is 3.5 meters per storey).

The large effect of the width of the street is once again confirmed by the appreciation of the crowdedness. Performing the analysis with the crowdedness, width of the street and the height of the buildings results in a more positive crowdedness appreciation when the width of the street is equal to or smaller than 6.5 meters. In that situation, respondents prefer a quiet or average crowdedness.

6.4 Decision Tree Analysis on Factors

The factors are rescaled into the 7-point Likert scales varying from very negative to very positive. This paragraph describes the decision tree analysis, linking the factors relevant independent variables. The factors concern dimensions, architecture and environment.

1.1 Dimensions

The factor 'Dimensions' is likely to be dependent on the latent variables:
- Width of the street;
- Height of the buildings;
- Width to height ratio;
- Crowdedness.

The factor 'Dimensions' is rated on 7-point Likert scale varying from very negative to very positive. The width of the street and the height of the buildings are measured in meters and the width to height ratio is the width of the street divided by the number of storeys. The crowdedness is measured in 'quiet', 'average' or 'crowded'.

Dimensions.
- The overall dimensions ratings are neutral (35.4%), fairly positive (27.9%) and positive (10.3%).
- The crowdedness has the largest impact on the results and, therefore, functions as the first splitting variable.
- The factor dimensions has more positive, but also more negative ratings when the crowdedness is crowded. In the crowded situation, the width of the street functions as the splitting variable. When the crowdedness is average or quiet, the height of the buildings functions as the splitting variable.
- When the crowdedness is crowded, respondents rate the dimensions more negative when the width of the street is equal to or less than 6.5 meters; the overall ratings are negative (17.3%) and very negative (2.7%), compared to negative (9.9%) and very negative (0.9%) when it is more than 6.5. When this width is more than 6.5 meters, respondents prefer a height of the buildings over 4 storeys.
- When the crowdedness is average or quiet, respondents rate the dimensions more positive when the height of the buildings is more than 4 storeys; the overall ratings are fairly positive (30.3%) and positive (11.2%), compared to fairly positive (26.8%) and positive (8.2%) when it is equal to or less than 4 storeys.
- When the height of the buildings is equal to or less than 4 storeys, respondents prefer a quiet crowdedness instead of an average crowdedness. When the height of the buildings is more than 4 storeys, respondents prefer an average crowdedness.

The overall percentage correctly predicted is 35.7%.

1.2 Age and dimensions

Dimensions.
- The age of the respondent functions as the second splitting variable and the first splitting variable remains 'Crowdedness'. To conclude: the respondent's age does not have the most influence on the results.
- When the crowdedness is average or quiet, respondents ranging from 14 to 25 years of age rate the factor dimensions slightly more positive; the overall ratings are fairly positive (30.6%) and positive (8.6%), compared to fairly positive (26.6%) and positive (9.9%) for the other two age classes.

- There are no further relevant conclusions concerning age. Therefore, the age classification is forced to function as the first splitting variable.

The overall percentage correctly predicted is 36.0%.

Dimensions with forced first splitting variable.
- Forcing age as the first splitting variable results in a node with respondents ranging from 14 to 25 years of age and a node with respondents ranging from 26 to 50 and 51 to 85 years of age.
- For respondents ranging from 14 to 25 years of age, the height of the buildings functions as the splitting variable. These respondents rate the dimensions more positive when the height of the buildings is more than 4 storeys; the overall ratings are fairly positive (32.7%) and positive (12.2%), compared with fairly positive (28.6%) and positive (7.0%) when it is equal to or less than 4 storeys.
- For the two older age classes, ranging from 26 to 85 years of age, the crowdedness functions as the splitting variable. These respondents rate the dimensions more positive but also more negative when it is crowded; the overall ratings are negative (12.9%), fairly positive (25.8%) and positive (13.5%), compared to negative (6.0%), fairly positive (26.6%) and positive (9.9%) when it is average or quiet.
- The width of the street functions as the last splitting variable. Respondents (only ranging from 14 to 25 years of age) prefer streets with a width over 12.5 meters when the height of the buildings is equal to or less than 4 storeys. In the other situations, respondents ranging from 14 to 25 years of age prefer a width smaller than 11.5 meters when the height of the buildings is more than 4 storeys, and respondents ranging from 26 to 85 years of age prefer smaller than 6.5 meters when the crowdedness is crowded.

The overall percentage correctly predicted is 36.7%.

2.1 Architecture
The factor 'Architecture' is likely to be dependent on the latent variables:
- Material facades;
- Shape facades;
- Colour of facades.

The factor 'architecture' is rated on 7-point Likert scale varying from very negative to very positive. The material of the facades is measured in 'historical' or 'contemporary and the shape of the facades in 'diverse (historical)' or 'clean and uniform'.

Architecture.
- The overall architecture ratings are neutral (34.2%), fairly positive (32.7%) or positive (13.0%).
- The shape of the facades has the largest impact on the results and, therefore, functions as the first splitting variable.
- Respondents rate the architecture more positive when the shape of the facades is diverse (historical); the overall ratings are fairly positive (39.6%) and positive (18.3%), compared to fairly positive (26.0%) and positive (8.0%) when it is clean and uniform.
- The diverse (historical) shape of facades has no further splitting variables.
- When the shape of the facades is clean and uniform, the colour of the facades functions as the splitting variable. Respondents rate the architecture more positive when the colour of the facades is bright; the overall ratings are fairly positive (31.8%) and positive (9.6%), compared to fairly positive (19.9%) and positive (6.2%) when it is dark.

The overall percentage correctly predicted is 38.7%.

2.2 Age and architecture

Architecture.

- The age of the respondents functions as the second splitting variable and the splitting variable before remains 'Shape of facades'. To conclude: the respondents age does not have the most influence on the results.
- When the shape of the facades is divers (historical), the respondents from the oldest age class rate the architecture the most positive; the overall ratings are fairly positive (43.4%) and positive (17.0), compared to fairly positive (36.0%) and positive (23.7%) for respondents ranging from 26 to 50 years of age, and fairly positive (37.9%) and positive (15.7%) for respondents ranging from 14 to 25 years of age.
- When the shape of the facades is clean and uniform, the colour of the facades functions as the splitting variable.
- The classes from 26 to 85 years of age, rate the architecture more positive when the colour of the facades is bright; the overall ratings are fairly positive (34.2%) and positive (13.7%), compared to fairly positive (13.9%) and positive (6.9%) when it is dark.
- The decision tree results do not make it possible to compare the other age classes' preferences.

The overall percentage correctly predicted is 39.9%.

3.1 Environment

The factor 'environment' is likely to be dependent on the latent variables:
- Greenery;
- Furniture.

The factor 'environment' is rated on 7-point Likert scale varying from very negative to very positive. The variable 'greenery' is measured in a numeric amount and the furniture is measured in its appearance.

Environment.

- The overall environment rating results are neutral (41.6%), fairly positive (13.0%) or positive (4.8%).
- The furniture has the largest impact on the results and, therefore, functions as the first splitting variable.
- Respondents rate the environment more positive when there is furniture present; the overall ratings are negative (2.6%), fairly positive (17.4%) and positive (7.8%), compared to negative (26.0%), fairly positive (12.4%) and positive (4.4%) when it is absent.
- When there is furniture present, there are no further splitting variables.
- When there is no furniture present, the presence of greenery functions as the splitting variable. The environment (on location without furniture) is rated more positive when there is greenery present; the overall ratings are fairly positive (12.9%) and positive (7.7%), compared to fairly positive (12.0%) and positive (1.8%) when it is absent.

The overall percentage correctly predicted is 41.6%.

4.2 Age and environment

Environment

- The age of the respondents functions as the last splitting variable and the two splitting variables before remain 'Greenery' and 'Furniture'. To conclude: the respondents age does not have the most influence on the results.
- When there is greenery present, the oldest age class rate the environment the most positive; the overall ratings are fairly positive (15.8%) and positive (12.8%), compared to fairly positive (8.9%) and

positive (4.4%) for respondents ranging from 26 to 50 years of age, and fairly positive (12.6%) and positive (4.7%) for respondents ranging from 14 to 25 years of age.

- There are no relevant conclusions concerning age. Therefore, the age classification is forced to function as the first splitting variable.

The overall percentage correctly predicted is 41.6%.

Environment with forced first splitting variable

- Forcing age to function as the first splitting variable results in a node ranging from 26 to 50 years of age, and a node ranging from 14 to 25 and 51 to 85 years of age.
- The further decision tree shows similar results as the same decision tree without the forced first splitting variable.

The overall percentage correctly predicted is 41.6%.

6.4.1 Conclusions decision tree analysis on factors

The results arising from the factor 'Dimensions', containing the latent variables 'Width of the street', 'height buildings', 'Width to height ratio' and 'Crowdedness', show similar conclusions as these latent variables individually do. The crowdedness and width of the street show the most importance and cause more positive dimension ratings. In crowded situations, respondents are more negative when the width of the street is equal to or smaller than 6.5 meters. The decision tree on the individual characteristic 'Width of the street' proves that respondents in general prefer streets smaller than 6.5 meters. To conclude, the crowdedness has clear effect on the appreciation of the width of the street, which functions as latent variable of the factor 'Dimensions'. Respondents on location with street wider than 6.5 meters prefer a buildings height that is over 4 storeys. Regarding the height of the buildings, the youngest age class prefers buildings with a height of more than 4 storeys. The other two age classes designate the crowdedness as most influencing aspect. Regarding age and the width of the street, the two age classes ranging from 26 to 85 years of age prefer streets equal to or smaller than 6.5 meters. The youngest age class rate the dimensions more positive when this width is over 6.5 meters, even when it is crowded.

The factor 'Architecture', which is based on 'Material of facades', 'Shape facades', is mainly dependent on the shape of facades and rated more positive when this is diverse (historical). This preference is mostly noticeable for respondents ranging from 50 to 85 years of age. When the shape of the facades is clean and uniform, the colour of the facades seems to be of most influence. The ratings, for every age class, are more positive when this colour is bright.

Performing the analysis on the factor containing greenery and furniture and linking it to these variables indicates that, for all ages, the environment is rated more positive when there is furniture and greenery present.

6.5 Multinomial logit model

This section describes the goal and elaboration of the Multinomial Logit (MNL) model. The first part clarifies how the model works and to which results it is supposed to lead. Firstly, the model is applied including a set of relevant characteristics to determine the effect of these variables on the respondent's choice of favourite shopping location. Thereafter, the same method is used to provide more insight into the respondents' favourite location concerning sphere. The last section argues the MNL tests which are based on the same principle, but include the age of the respondents.

6.5.1 Modelling preferences

In order to investigate which independent variables play a role in the preference or selection of a particular shopping area by shoppers, the multinomial logit model is used during this study. By using the MNL model, the probability which shopping area within Maastricht or 's-Hertogenbosch has the preference by the respondents can be calculated. The physical characteristics may play an important role in the overall attractiveness of a shopping area. These physical characteristics or parameters can provoke either a positive or negative association with the particular shopping area and some of these can be more important than others.

The inventory of the physical characteristics has been done for the various survey locations within Maastricht and 's-Hertogenbosch. These characteristics have been previously described in Chapter 4 as part of the analysis of the survey locations. Because each of the variables has a possible influence on the appreciation of the specific shopping area, it is necessary to estimate the parameters for the various variables. The degree of influence of these variables is determined by the statistical analysis program Limdeb. This program estimates the model by maximum likelihood estimation. All physical characteristics serve as variables in the model. Nominal variables are not prohibited in the MNL model. Therefore, dummy variables are created using only the values '1' when a certain aspect is factual, and '0' when a certain aspect is not factual (appendix I). The estimated parameters in the model reveal the usefulness and the positive or negative influence of each of these physical characteristics. The MNL model is based on the assumption that each individual i has a number of alternatives which form the choice set C_i. This choice set may differ across individuals.

Each of the alternatives consists of a number of characteristics (k). The score of characteristic k of alternative j is denoted by X_{ijk}. All of the characteristics of alternative j have a certain utility. The total of this utility for each of the characteristics of alternative j is achieved by using the linear additive function. The structural utulity of alternative j is the sum of the scores of the weighted characteristics of alternative i.

$$V_{ij} = \sum_k \beta_k X_{ijk}$$

    V_{ij} the structural utility of alternative j for individual i
    β_k the weight for characteristic k
    X_{ijk} de score of characteristic k of alternative j for individual i

All Individuals have different preferences and each of the physical characteristics will be obtained by sensory perception. It is plausible that the utility of a certain alternative is not constant over time for each of the individuals and differs across individuals. Besides the structural utility of the alternative, a second component is included to take the differences across individuals and time into account. Furthermore, the error component may account for measurement errors and model specification errors. The sum of these two components is equal to the total random utility (U_{ij}) of alternative j for individual i:

$$U_{ij} = V_{ij} + \varepsilon_{ij}$$

It is assumed that individuals always choose the alternative with the highest utility from the set of alternatives. The probability that individual i will choose alternative j ($p_{ij}|C_i$) is equal to the probability that the total utility of alternative j for individual i (U_{ij}) is higher than the total utility of all of the other alternatives in the choice set. To determine the probability that a certain alternative will be chosen from the total set of alternatives, an assumption about the statistical distribution of the error component is necessary. Predominantly, the double exponential distribution is used (Johnson & Kotz, 1970). In addition, it is assumed that the variance of the error components is equal for all alternatives. Based on these assumptions the multinomial logit model is defined as follows:

$$p(_{ij}|C_i) = exp(V_{ij}) / \sum_m exp(V_{im})$$

$p(_{ij}|C_i)$ the probability that individual i chooses alternative j from choice set C_i
V_{ij} the structural utility of alternative j for individual i

6.5.2 Applying the MNL model

Firstly, the variables (the characteristics of the alternative shopping locations) are tested one by one in the model to explore the contribution of each variable to correctly predict the most preferred shopping location. Next, given the most promising characteristics, different combinations of dissimilar characteristics were entered into the model. The combination witch best predicts the chosen alternatives can be considered as the optimal model. This resulted in a coefficient and a level of significance for each individual variable (characteristic). The coefficient indicates to which degree the variable influences the utility and the level of significance indicates whether this coefficient is different from zero. A coefficient is significant when the corresponding level of significance is less or equal then 0.05. The log-likelihood is a measure of goodness of fit. A value close to 0 indicates a good fit. The variables that are inserted in the model are tested for correlation (see appendix J). Variables with high mutual correlations should not be entered together into the model

If the coefficients are significant and have the expected sign, it is required to verify how well the model predicts the observed choice behaviour. To verify this, the Rho² is calculated given the log-likelihood of the optimal model and the log-likelihood of the null model. The parameters (coefficients) in the null model are all zero, implying that the probability that an individual chooses for a given alternative is equal to 1 /J, where J consists of the number of alternatives in the choice set. The value of Rho² lies, in principle, between 0 and 1. A high Rho² score indicates that the model performs well. In general, the model performs reasonable if Rho² exceeds 0.2. If the value is zero, the model is not better then the null model.

6.5.3 Results favourite location

Each individual characteristic was tested with the MNL model to distinguish the characteristics suitable for further analysis. A total of 18 characteristics were selected for further analysis regarding the favourite location:

- Distance to parking
- Distance to public transport stop
- Fashion and luxury shops
- Daily shops
- Other shops
- Restaurants/leisure outlets
- Shape of facades
- Material of facades
- Material of pavements
- Colour of facades (Dark)
- Colour of facades (Bright)
- Amount of light (High)
- Background Noise (High)
- Music
- Greenery
- Shop windows (Striking)
- Advertisement Signs (Discrete)
- Advertisement Signs (Striking)

The combination of characteristics 'Fashion and luxury shops', 'Daily shops', 'Restaurants/leisure outlets', 'Shape of facades' and 'Distance to public transport stop' performs the best with $Rho^2 = 0,0410$ (log-likelihood optimal model = -957.2949 and log-likelihood null-model = -998.2112). Further results regarding the favourite location can be found in Table 6.4.

Table 6.4; Results MNL Favourite location

Characteristics	Coefficient	P[|Z|]>z||
Fashion and luxury shops (>15 shops/ ≤15 shops)	1.0048172	0.0000
Daily shops (>1 shops/ ≤1 shops)	0.44477915	0.0001
Restaurants/leisure outlets (>6 shops/ ≤6 shops)	-0.6292883	0.0041
Shape of facades (Historical/ Clean and uniform)	0.29329768	0.0233
Distance to public transport stop (≤150 meters/ >150 meters)	0.51547568	0.0002

The parameter for the characteristic 'Fashion and luxury shops' seems to indicate that respondents prefer a higher number of these shops due to the positive coefficient. The utility value for this characteristic is 1.005. This means that if an area scores '1' on this attribute, the utility of the area increases with 1.005. An amount of daily shops more than one results in an increase of the utility with 0.445. Restaurants and leisure facilities located in the specific shopping area lead to a decrease of utility with 0.629 when the amount is larger than 6. The utility of a location increases with 0.293 when the shape of the facades is diverse (historical) and the utility increases with 0.515 when the distance to the nearest public transport stop is equal or less than 150 meters.

6.5.4 Results sphere

Estimating the MNL model resulted in the following 22 characteristics relevant for further analysis:

- Distance to parking
- Distance to public transport
- Fashion and luxury shops
- Restaurants/leisure outlets
- Shape of facades
- Material of facades
- Material of pavements
- Colour of facades (Dark)
- Colour of facades (Bright)
- Amount of light (High)
- Amount of light (Low)
- Background Noise (High)
- Background Noise (Low)
- Music
- Greenery
- Shop windows (Discrete)
- Shop windows (Striking)
- Advertisement Signs (Discrete)
- Advertisement Signs (Striking)
- Width of the street
- Height of the buildings
- Width to height ratio

The combination of the characteristics 'Shape of facades', 'Colour of facades (Dark)', 'Amount of light (Low)', 'Background noise (High)' and 'Width of the street' performs the best with Rho^2 = 0,0744 (log-likelihood = -917.0171 and log-likelihood null-model= -990.7564). The estimated values can be found in Table 6.5.

Table 6.5; Results MNL favourite location concerning sphere

Characteristics	Coefficient	P[|Z|]>z]|
Shape of facades (Historical / Clean and uniform)	1.18442586	0.0000
Colour of facades (Dark/ Mixed)	0.09090205	0.0005
Amount of light (Low/ Average)	1.06839462	0.0002
Background noise (High/ Average)	-0.59684380	0.0016
Width of the street (>6.5 meters/ ≤6.5 meters)	-0.35535489	0.0046

The utility of the area increases by 1.184 when the variable 'Shape of facades' scores '1'. This means that the utility increases when the shape of the facades is diverse (historical) instead of clean and uniform. When the colour of the facades is dark, the utility increases by 0.091 and when the amount of light is low, the utility increases by 1.068. The coefficient of the background noise (high) is -0.597. Therefore, a high background noise results in a decreasing location utility of 0.597. The utility of the location increases when the width of the street is less than 6.5 meters. This is because the utility decreases with 0.355 when this variable scores '1', which is the case when the width is more than 6.5 meters.

Subsequently, the probability that a survey location is chosen is determined. Therefore, the utility of each survey location is determined by summing the products of estimated parameters and scores of corresponding physical characteristics. This will be reported in the following subsections.

6.5.5 Preferences favourite location and favourite location concerning sphere

Maastricht
The least preferred shopping location in Maastricht is Mosae Forum (Table 6.6). The probability for this location to be the first choice is 16.1%. The location Stokstraat comes in at third place with 22.5% probability to perform be selected as first choice. Slightly better than Stokstraat is the Entre Deux which is the second most preferred location to be chosen (26.2%). The Maastrichter Brugstraat has the highest probability to be chosen as favourite location (35.1%).

Mosae Forum seems to be the shopping area least likely to be chosen as favourite location concerning sphere (Table 6.7). The probability for this location to be the first choice is 6.3%. Entre Deux comes at the third place with 11.4% probability to be chosen as first choice. The second most preferred location to be chosen as first choice is the Maastrichter Brugstraat (33.9%). The Stokstraat has the highest probability to be chosen regarding the sphere in the area (48.4%).

Table 6.6; Results MNL favourite location Maastricht

Maastricht	V	exp(V)	p(β)	model	survey
Maastrichter Brugstraat	1.22	3.40	0.35	35.1%	29.7%
Stokstraat	0.78	2.18	0.23	22.5%	27.7%
Entre Deux	0.93	2.53	0.26	26.2%	25.9%
Mosae Forum	0.44	1.56	0.16	16.1%	16.7%

Maastricht	V	exp(V)	p(β)	model	survey
Maastrichter Brugstraat	0.83	2.29	0.34	33.9%	28.4%
Stokstraat	1.18	3.27	0.48	48.4%	40.5%
Entre Deux	-0.26	0.77	0.11	11.4%	19.8%
Mosae Forum	-0.86	0.42	0.06	6.3%	11.3%

's-Hertogenbosch

The least preferred shopping location in 's-Hertogenbosch is Burgemeester Loeffplein (Table 6.8). The probability for this location to be the first choice is 13.5%. The location Arena comes in at the third place with 21.1% probability to be the first choice. The Kerkstraat (24.5%) is slightly better than Arena and the Hinthamerstraat has the highest probability to be chosen as favourite location (41.0%).

Burgemeester Loeffplein seems to be the shopping area least likely to be chosen as favourite location concerning sphere (Table 6.9). The probability for this location to be the first choice is 10.9%. Arena comes at the third place with 17.5% probability to be the first choice. The most likely locations to be chosen as first choice areKerkstraat (35.8%) and Hinthamerstraat (35.8%).

Table 6.8; Results MNL favourite location 's-Hertogenbosch

's-Hertogenbosch	V	exp(V)	p(β)	model	survey
Hinthamerstraat	1.11	3.03	0.41	41.0%	40.7%
Kerkstraat	0.59	1.81	0.24	24.5%	24.4%
Arena	0.44	1.56	0.21	21.1%	27.2%
Burgemeester Loeffplein	0	1	0.14	13.5%	7.7%

Table 6.9; Results MNL favourite location 's-Hertogenbosch concerning sphere

's-Hertogenbosch	V	exp(V)	p(β)	model	survey
Hinthamerstraat	0.83	2.29	0.36	35.8%	37.1%
Kerkstraat	0.83	2.29	0.36	35.8%	34.2%
Arena	0.12	1.12	0.18	17.5%	18.1%
Burgemeester Loeffplein	-0.36	0.70	0.11	10.9%	10.6%

Validation

In tables 6.5 to 6.8, the percentage each location is preferred according to the survey is reported as well. Comparing model predictions with the actual survey results can be considered as a means of validating the MNL model. The percentages according to the survey show a reasonable degree of similarity with model predictions.

6.6 MNL including age

This section again concerns multinomial logit analyses, now including the respondent's age. The main purpose is to determine which characteristics affect the utility of a location and if and how that depends on the age of the consumer. The analyses are based on the characteristics that proved to be of significant influence in the previous MNL analyses. Firstly, the results concerning the favourite location are described. Thereafter, the results for the favourite location regarding sphere will follow.

Linking the characteristics found in the general analysis to the respondents' age provides an additional set of variables as follows:

- Dummy Y_1 Young class   14 – 25 years   Dummy $Y_1 = 1$
                        Middle class   26 – 50 years   Dummy $Y_1 = -1$
                        Old class   51 – 85 years   Dummy $Y_1 = 0$
- Dummy Y_2 Young class   14 – 25 years   Dummy $Y_2 = 0$
                        Middle class   26 – 50 years   Dummy $Y_2 = -1$
                        Old class   51 – 85 years   Dummy $Y_2 = 1$

Each regular variable is multiplied by Y_1 and Y_2, yielding interaction variables. By stepwise adding and removing these interaction variables to the models presented above, the most optimal model was obtained.

6.6.1 Favourite location

Earlier analysis showed that the characteristics 'Fashion and luxury shops', 'Daily shopping', 'Restaurants', 'Shape of facades' and 'Distance to public transport stop' are significant for the respondents first choice of the favourite location. Each regular variable is multiplied by Y_1 and Y_2, yielding interaction variables.

Table 6.10; Results MNL favourite location including age

Characteristics	Abbr.	Coefficient	P[|Z|>z]|
Fashion and luxury shops (>15 shops/ ≤15 shops)	SH1	0.95426738	0.0000
Daily shops (>1 shop/ ≤1 shop)	SH2	0.48418518	0.0000
Restaurants/leisure outlets (>6 shops/ ≤6 shops)	REST	-0.58762489	0.0083
Shape of facades (Historical/ Clean and uniform)	SHFAC	0.39917503	0.0041
Distance to public transport stop (≤150 meters/ >150 meters)	ACC2	0.51211068	0.0002
Daily shops x Y_1	SH2Y$_1$	0.639103	0.0000
Shape of facades x Y_1	SHFACY$_1$	-0.721676	0.0000
Fashion and luxury shops x Y_2	SH1Y$_2$	0.578828	0.0000
Daily shops x Y_2	SH2Y$_2$	-0.464796	0.0006

The coefficients (Table 6.10) indicate that age significantly affects the utility assigned to the offer of daily shops and the shape of facades regarding the choice of the respondent's favourite location. The base part worth utility for fashion and luxury shops (SH1) is equal to 0.954. This means that if an area scores '1' on this attribute, the utility of the area increases by 0.954. There are significant interactions with the age variables, the utility decreases with 0.579 for the middle age class, and increases with the same value for the age class ranging from 51 to 85 years of age. The base part worth utility for SH2, representing the number of the daily shops, is 0.484. However, this value increases by 0.639 in the case of young consumers and decreases by 0.465 in the case of consumers aged 51 – 85 years. For the

middle age class, the value decreases with (0.639-0.465=) 0.174. The base part worth utility for the restaurants/leisure offer (REST), remains -0.588 per unit for all age classes. If an area scores 1 on the variable SHFAC (shape of facades), its basic part worth utility connected to this attribute is 0.399. This value decreases by 0.722 for young consumers, increases by 0.722 for middle aged consumers and remains 0.399 for the old consumers. There are no significant interactions with the age variable concerning the distance to nearest transport stop variable (ACC2), therefore this value does not depend on the age of the consumer. The base part worth utility for this attribute is 0.512.

The Rho^2 for this model is 0.0774.

Probability first choice favourite location

Table 6.11 and Table 6.12 show the predicted probabilities according to the MNL model including interaction effects with age.

Table 6.11; Probability first choice favourite location Maastricht including age

Young age class (14 – 25, n=139)	MNL model	%	survey	%
First choice	Entre Deux	38.6%	Entre Deux	37.4%
Second choice	Maastrichter Brugstraat	27.6%	Mosae Forum	25.9%
Third choice	Mosae Forum	24.8%	Maastrichter Brugstraat	25.2%
Fourth choice	Stokstraat	9.0%	Stokstraat	1.5%
Middle age class (26 – 50, n=145)	MNL model	%	survey	%
First choice	Maastrichter Brugstraat	41.0%	Stokstraat	34.7%
Second choice	Stokstraat	30.1%	Maastrichter Brugstraat	32.7%
Third choice	Mosae Forum	15.5%	Entre Deux	16.8%
Fourth choice	Entre Deux	13.5%	Mosae Forum	15.8%
Old age class (51 – 85, n=101)	MNL model	%	survey	%
First choice	Maastrichter Brugstraat	34.4%	Maastrichter Brugstraat	43.4%
Second choice	Stokstraat	33.8%	Stokstraat	34.0%
Third choice	Entre Deux	23.4%	Entre Deux	16.0%
Fourth choice	Mosae Forum	8.4%	Mosae Forum	6.6%

Table 6.12; Probability first choice favourite location 's-Hertogenbosch including age

Young age class (14 – 25, n=98)	MNL model	%	survey	%
First choice	Hinthamerstraat	34.7%	Arena	38.6%
Second choice	Arena	33.6%	Hinthamerstraat	36.6%
Third choice	Kerkstraat	20.8%	Kerkstraat	16.6%
Fourth choice	Burgemeester Loeffplein	10.9%	Burgemeester Loeffplein	8.3%
Middle age class (26 – 50, n=150)	MNL model	%	survey	%
First choice	Hinthamerstraat/ Kerkstraat	39.3%	Hinthamerstraat	43.9%
Second choice	Hinthamerstraat/ Kerkstraat	39.3%	Kerkstraat	25.5%
Third choice	Burgemeester Loeffplein	11.8%	Arena	22.4%
Fourth choice	Arena	9.6%	Burgemeester Loeffplein	8.2%
Old age class (51 – 85, n=106)	MNL model	%	survey	%
First choice	Hinthamerstraat/ Kerkstraat	41.4%	Hinthamerstraat	43.4%
Second choice	Hinthamerstraat/ Kerkstraat	41.4%	Kerkstraat	34.0%
Third choice	Burgemeester Loeffplein	10.7%	Arena	16.0%
Fourth choice	Arena	6.5%	Burgemeester Loeffplein	6.6%

Environmental influences on consumer behaviour

6.6.2 Favourite location concerning sphere

The characteristics 'Shape of facades', 'Colour of facades (Dark)', 'Amount of light (Low)', 'Background noise (High)' and 'Width of the street' appeared to be significant for the respondent's first choice of the favourite location concerning sphere. The results of adding interactions with age are listed in Table 6.13.

Table 6.13; Results MNL favourite location concerning sphere adding age

Characteristics	Abbr.	Coefficient	P[|Z|>z]|
Shape of facades (Historical/ Clean and uniform)	SHFAC	1.1873747	0.0000
Colour of facades (dark/ average)	FACD	0.80710119	0.0005
Amount of light (low/ average)	LIGHTL	0.86704259	0.0030
Background noise (high/ average)	BGNH	-0.56279958	0.0031
Width of the street (>6.5 meters/ ≤6.5 meters)	WIDTHS	-0.39964567	0.0017
Amount of light	$LIGHTLY_1$	0.68166756	0.0002
Width of the street	$WIDTHSY_1$	0.58886722	0.0001
Background noise	$BGNHY_2$	-0.40988645	0.0127

The coefficients (Table 6.12) indicate that interactions with the amount of light, the width of the street and the background noise significantly contribute to the respondents first choice of most preferred location concerning sphere and that different age groups attach different weights to these variables. The base part worth utility for the shape of the facades (SHFAC) is equal to 1.187. This means that if an area scores '1' on this attribute, the utility of the area increases by 1.187. There are no significant interactions with the age variable, therefore this value does not depend on the age of the consumer. The base part worth utility for FACD, which represents the colour of the facades (dark = 1 and neutral = 0) is 0.807. This has, once again, no significant interactions with the age variable. The value of the amount of light (low), or LIGHTL, does depend on the age of the consumer. The base part worth utility for this attribute is 0.867 and increases with 0.682 for the young consumers. For middle class consumers, this value decreases with 0.682. The background noise (high), abbreviated by BGNH, has a base part worth utility value of -0.563. This value increases with 0.410 for middle aged consumers and decreases with 0.410 for consumers aged over 50 years. The base part worth utility for the width of the street (WIDTHS) increases by 0.589 for the young age class (14 – 25 years of age) and decreases with this same value for consumers aged between 26 and 50 years. The actual base part worth utility for this attribute is -0.340. The Rho^2 for this model is 0.0906.

Probability first choice favourite location concerning sphere

Table 6.14 and Table 6.15 show MNL model results for the favourite location concerning sphere including interaction effects with age.

Table 6.14; Probability first choice favourite location in Maastricht concerning sphere, including age

Young age class (14 – 25, n=139)	MNL model	%	survey	%
First choice	Maastrichter Brugstraat	34.5%	Maastrichter Brugstraat	33.1%
Second choice	Stokstraat	28.5%	Stokstraat	25.9%
Third choice	Entre Deux	23.6%	Entre Deux	25.2%
Fourth choice	Mosae Forum	13.4%	Mosae Forum	15.8%
Middle age class (26 – 50, n=145)	MNL model	%	survey	%
First choice	Stokstraat	54.2%	Stokstraat	26.9%
Second choice	Maastrichter Brugstraat	20.2%	Maastrichter Brugstraat	11.0%
Third choice	Entre Deux	13.8%	Entre Deux	27.6%
Fourth choice	Mosae Forum	11.8%	Mosae Forum	34.5%
Old age class (51 – 85, n=100)	MNL model	%	survey	%
First choice	Stokstraat	44.7%	Stokstraat	47.7%
Second choice	Maastrichter Brugstraat	30.0%	Maastrichter Brugstraat	24.8%
Third choice	Entre Deux	13.6%	Entre Deux	19.5%
Fourth choice	Mosae Forum	11.8%	Mosae Forum	8.1%

Table 6.15; Probability first choice favourite location in 's-Hertogenbosch concerning sphere, including age

Young age class (14 – 25, n=97)	MNL model	%	survey	%
First choice	Hinthamerstraat Kerkstraat	32.0%	Hinthamerstraat	34.5%
Second choice	Hinthamerstraat Kerkstraat	32.0%	Kerkstraat	27.6%
Third choice	Arena	26.2%	Arena	26.9%
Fourth choice	Burgemeester Loeffplein	9.8%	Burgemeester Loeffplein	11.0%
Middle age class (26 – 50, n=149)	MNL model	%	survey	%
First choice	Hinthamerstraat Kerkstraat	38.2%	Hinthamerstraat Kerkstraat	38.1%
Second choice	Hinthamerstraat Kerkstraat	38.2%	Hinthamerstraat Kerkstraat	38.1%
Third choice	Arena	12.0%	Arena	13.4%
Fourth choice	Burgemeester Loeffplein	11.6%	Burgemeester Loeffplein	10.3%
Old age class (51 – 85, n=106)	MNL model	%	survey	%
First choice	Hinthamerstraat Kerkstraat	38.8%	Hinthamerstraat Kerkstraat	39.6%
Second choice	Hinthamerstraat Kerkstraat	38.8%	Hinthamerstraat Kerkstraat	39.6%
Third choice	Burgemeester Loeffplein	11.8%	Arena	10.4%
Fourth choice	Arena	10.6%	Burgemeester Loeffplein	10.4%

6.7 Conclusions multinomial logit model

In order to investigate which independent variables play a role in the preference or selection of a particular shopping area by shoppers, the multinomial logit model is used. Removing characteristics with a significance level larger than 0.05 or with fixed parameters, leads to 18 characteristics appropriate for further analysis regarding the favourite location. Regarding these variables, the combination of characteristics 'Fashion luxury shops', 'Daily shops', 'Restaurants/leisure outlets', 'Shape of facades' and 'Distance to public transport stop' performs the best. Testing the 22 characteristics appropriate for further analysis regarding the sphere, proves that the combination of the characteristics 'Shape of facades', 'Colour of facades (Dark)', 'Amount of light (Low)', 'Background noise (High)' and 'Width of the street' leads to the best results. Including the age classes as a variable in the MNL model indicates that the coefficients 'Daily shops', 'Shape of facades' and 'Fashion and luxury shops' contribute to the choice of the respondent's favourite location. The coefficients regarding the favourite location concerning sphere show that 'Amount of light (low)', 'Width of the street' and 'Background noise (high) contribute to the choice of the respondents. The other characteristics have no significant interaction, therefore these characteristics do not depend on the age of the consumer.

7. CONCLUSIONS AND RECOMMENDATIONS

This chapter describes the conclusions based on the literature review and data analyses. The goal of this research was to empirically determine which – and how – atmospherics contribute to the experiential value of the consumer, taking into account differences between the elderly and youngster. Decision tree analyses and multinomial logit analyses were performed to derive results from the dataset that was obtained by means of a survey. For the decision tree analysis, the dependent variables and factors, both representing the respondent's ratings regarding appreciation of shopping locations, were linked to independent variables representing spatial characteristics that are likely to influence the respondent's appreciation. This provides insight into the significant effects of certain variables on the rating scores of the respondents. The MNL analyses revealed which location respondents choose as most favourite location or which is the most preferable location regarding sphere, and which characteristics contribute to this choice.

This chapter is organized by firstly answering the sub questions and the main question. Thereafter, the respondents' most appreciated shopping location according to this study will be described. The final part of the conclusion sector discusses the results of the MNL model and finally, this section provides recommendations for further research, possible optimizations of the current study and some managerial recommendations.

The main research question that will be answered is:

Which – and how do – atmospherics of an inner-city shopping area contribute to the experiential value of the consumer, differentiated by age?

This question is answered by subsequently answering the following sub questions:

1. How can experiential value be explained?
2. How can 'atmospherics' be defined to provide useful characteristics of the shopping area?
3. Which – and how do – atmospherics contribute to the experiential value?
4. What are the differences between generations of consumers?

7.1 Conclusions

1. How can experiential value be explained?

The literature review provided the answer to this question. Consumers in general are more willing to spend more time and money for a certain experience during a shopping trip. The experiential value is something personal and a measure of attractiveness of a shopping area based on interpretations and feelings provoked by the environment. Therefore, positive appreciated environmental characteristics lead to positive effects on the experiential value.

2. How can 'atmospherics' be defined to provide useful characteristics of the shopping area.

Atmospherics are attributes that may influence the consumers' perception about a specific shopping area. The literature review led to the definition that an atmospheric is an important environmental cue that provides consumers with an indication of the location quality. This definition includes items such as

ambience, colour, smell, music and layout. Besides these items, other and more tangible aspects proved to be of importance for this study. Academic literature resulted in a list of 35 items which was shortened based on interviews with professionals in the field of retail. The eventual 25 atmospherics can be described as tangible and intangible aspects of a shopping location that influences the environment perception and the behaviour of the consumer:

- Accessibility
- Shops
- Restaurants/ leisure
- Shape of facades
- Material facades
- Material pavement
- Colour facades
- Colour pavement
- Amount of light

- Background noise
- Music
- Smell
- Indoor/ outdoor
- Greenery
- Furniture
- Shop Windows
- Advertisement Signs

- Tidiness
- Width street
- Height buildings
- Width to height ratio
- Crowdedness
- Other Visitors
- Colour of light
- Elevations

3. Which – and how do – atmospherics contribute to the experiential value?

The following (appearance of) atmospherics affect the appreciation of the shopping location positively and therefore, have a positive influence on the experiential value:
Respondents in general prefer a historical appearance of the facades and pavements, and the shop windows and advertisement signs are preferably of low conspicuousness. The results show a preference for outdoor locations and narrow streets with a width of less than 6.5 meters. Locations with wider streets results in a more positive appreciation when the height of the buildings is more than 3 storeys. The crowdedness has the most positive influence when it is average or quiet.

A good appreciated shopping location
Based on the conclusions mentioned before, a good appreciated shopping location should be designed with the atmospherical aspects below kept in mind. This section also answers the sub question:

4. What are the differences between generations of consumers?

The shopping location with the best influence on the experiential value:
- The distance to nearest parking should be closer than 150 meters for respondents arriving by car.
  - → This effect is even larger for the older respondents ranging from 51 to 85 years of age.
- There should be a high number of fashion and luxury shops
  - → Young shoppers, aged 14 to 25 years, prefer more than 10 shops and middle aged and older shoppers prefer even more than 15 shops.
- The amount or restaurant/leisure facilities should be between 6 and 17.
  - → This is primarily applicable for respondents ranging from 14 to 50 years of age.
- The shopping area should be an outdoor location with rough (historical) pavement materials.
  - → This preference was not noticed for the middle age class, aged from 26 to 50 years.
- The facades should be of diverse (historical) shape with mixed colours, consisting of historical materials, and with discrete shop windows and advertisement signs.
  - → The historical aspects have the most positive influence on the older respondents. Younger respondents in general are the least negative group when the appearance is contemporary or of high conspicuousness
- There should be music, greenery and furniture present.

- The width of the street should be equal to or less than 6.5 meters. When it is wider, the height of the buildings should be more than 3 storeys.
    → Especially the older respondents prefer a narrow street.

Favourite shopping location and best sphere location

Based on the results of the MNL analysis, to optimize a shopping location's probability being considered a favourable shopping location, the locations should be characterised by:
- Fashion and luxury shops   the amount should exceed 15
- Daily shops   should be present
- Restaurants/leisure   the amount should exceed 6
- Shape of facades   should be historical
- Distance nearest public transport stop   should be equal to or less than 150 meters

However, the most appreciated shopping location in terms of sphere is characterised by:
- Shape of facades   should be diverse (historical)
- Colour of facades   should be dark
- Amount of light   should be low
- Background noise   should be average level
- Width of the street   should be equal to or less than 6.5 meters

It appears that a shopping location with a nice sphere is not automatically considered the best location.

Taking into account the age of the consumers in the MNL analysis by means of interaction effects shows that the effect of some characteristics depends on the age of the consumers. The amount of fashion and luxury shops, the amount of daily shops and the shape of the facades appear to depend on the consumers' age.

The positive influence of 15 and more fashion and luxury shops is more noticeable for respondents ranging from 51 to 85 years of age. For the middle age class, the positive influence of this amount decreases but still, remains positive. The increasing utility of a location caused by the amount of daily shops that exceeds one, is even higher for respondents aged 14 to 26 years. Although it remains positive, the influence of this aspect is the lowest for the oldest age class. The influence of the daily shops for the middle age class is in between the other two classes. In general, the shape of the facades should be historical. However, the youngest age class prefers a modern shape of the facades.

According to the MNL model including age, the location with the best sphere again is not automatically considered the best location. The analysis also shows that the preferences for the locations differ across the age classes. The amount of light, the background noise and the width of the streets appear to depend on the consumers' age.

The amount of light should be low for all age classes, but this is especially applicable for the youngest age class. The general analysis proved that the width of the street should be equal to or less than 6.5 meters for the best sphere location. However, respondents ranging from 14 to 25 years of age prefer streets wider than 6.5 meters. The background noise on the best sphere location should be average level instead of high level for all age classes, particularly for the oldest class.

The existing academic literature on the contribution of physical characteristics of inner-city shopping areas concerning consumer experience concludes that the attributes: merchandising, services, accessibility, atmospherics, security and entertainment significantly influence the experiential value of

consumers. This study complements the existing literature by measuring the effects of atmospherics on the experiential value of a shopping area. The results prove that there experiential value indeed is dependent from the atmospherics and their appreciation. The conclusions above confirm and reject some of the expectations that were made after conducting the literature review. According to the results of this study, elderly add more value to the historical appearance of a shopping area, which is in line with the findings from the literature review. Another clear confirmation for this age class is that they add the most value to a good accessibility. Several aspects, but in particular the conclusion that younger consumers prefer modern shopping location, confirm the literature that there are differences concerning the needs and demands and interpretations of shopping areas for different generations of consumers. A remarkable and contradictory finding is that this study states that the older consumers consider the high amount of fashion and luxury shops as positive, while the literature proved that the young consumers score higher on fashion fanship. Possible explanation is that fashion fanship only represents the loyalty to a certain brand instead of the choice of the favourite shopping area. The literature review indicates that elderly appraise the security as important aspect. Therefore, it seems obvious that they prefer an open shopping area with wide streets. However, this study states the opposite since the elderly form the most positive age class when it comes to narrow streets.

7.2 Recommendations

This research focuses on two cities, namely Maastricht and 's-Hertogenbosch. Both cities possess many common characteristics and are both located in the southern part of The Netherlands. This results in several restrictions, such as; (demographic) personal characteristics are limited to the consumers that mostly live in the surrounding areas, only mid-size cities and inner-city shopping areas are included in this study, the concerning locations have a clear distinction between a historical and non-historical appearance, obtained data is limited to the environmental characteristics of the eight survey locations.

Obtaining the data occurred using surveys on the regarding shopping locations, which were established using literature and expert interviews. Although there was some additional information given by several respondents, the data is restricted to the answers obtained by the questions that were listed in the survey. This has the advantage that the amount of respondents is very high, but has the disadvantage that there is nearly any useable data beyond the survey data. Combining the obtained data with qualitative research will broaden the scope of the research. Another approach is to start with qualitative research among consumers on the shopping locations, and use this information gathering method, together with the expert interviews, to compile the questions for the survey.

Although, this study has a large number of environmental characteristics, there are more characteristics that can be useful for further research. On the other hand, this research has a comprehensive approach and it is likely that focussing on fewer individual aspects will result in other and more profound relationships and conclusions.

This study in principal can be divided into two result-oriented studies, with general findings on one hand, and findings related to consumers' age on the other hand. Two other studies, which are based on the same data set, concentrate at other context variables. The focus in these studies is on the comparison of historical and non-historical areas and the incorporation of the consumers' motivational orientation. There are several more possibilities for further research to a focus on a certain aspect, for instance: the consumers' gender, income class, education level or other environmental characteristics such as an indoor or outdoor shopping area. The survey locations could also be taken in broader perspective because they are not separately functioning from the historic inner-city shopping area.

To improve the appreciation of inner-city shopping areas, shopping centre managers and developers should consider the aspects mentioned above in attempts to improve the experiential value of shopping locations. In short, use historic icons and buildings if present, strive to narrow shopping streets with a high number of fashion and luxury shops, implement greenery and furniture and make sure that the accessibility is good. Thereby, consumers of different ages show clear differences in the interpretation and appreciation of the examined atmospherics. Shopping centre managers and developers should take these differences in consumer groups into account.

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APPENDICES

APPENDIX A. EXPERT INTERVIEWS

Expert	Function	Company
S. Bervoets	Centre manager	Multi Corporation
B. Vervliet	Marketing	Multi Corporation
drs. ing. A. Ruigrok*	Ass. Director Research	Multi Corporation
drs I. Ploegmakers MSRE*	Manager Consultancy	WPM Groep
drs. F. Wigman**	Director	BRO

* Committee member of the Dutch council of shopping centers (NRW)
** Committee member of Platform Binnenstadsmanagement

Interview

It is [date] and I am in conversation with [name], who is [function] at [organization].

Interview notes
To complete my master Real estate Management & Development I am carrying out a research into consumer experience at inner-city shopping centers. I am doing this, because "last time, the Dutch retail sector is subject of drastic changes" (Dutch Council of Shopping Centers [DCSC], 2011b).

Through these interviews, I try to get clear which resources are being used by market parties to create an attractive shopping centre for consumers. More specifically, which resources are being used by market parties to create an atmospheric within the shopping centre, which fits the needs of the consumers? The interviews will be conducted among different disciplines, whose playing a significant role in the developing or exploitation phase of shopping centers. The results will be compared with academic literature. The results of the interviews and the academic literature will serve as the basis for further research among the users of shopping centers: the consumers.

This is interview contains questions about your involvement in the retail sector, the causes and effects of and the solutions of the upcoming problems in shopping areas, and finally in more detail about the role of atmospherics in shopping centers. Are there any questions, so far?

1. Role

Could you briefly describe your function within the organization?

Could you tell me in which way you are involved in the development or exploitation phase of shopping centers?

2. Causes and effects (10min)

What do you think, are the biggest upcoming problems / trends within the retail sector in shopping centers?

What do you think, are the efforts of these problems?

Are there, and if so, please explain the opportunities to tackle these problems?

3. Role of atmospherics (30min)

The Academic literature and the Dutch Council of Shopping Centers suggest consumer behaviour and more specifically atmospherics as the most import solutions for the vacancy in shopping areas. In common approximately 30 minutes I would like to ask some questions about the role of atmospherics within a shopping centre.

How would you describe the Atmospherics within a shopping area?

To what extent is thinking about the concept atmospherics customary within your discipline? And in other disciplines? Do you know successful/ unsuccessful projects whit a focus on atmospherics?

Do you think market parties experience atmospherics as a solution to solve the vacancy in shopping centers? Where does that appear from?
      Changing design principles
      Increasing promotion budget
      Changing mind-set (shift to demand side)

What is the experience you have with atmospherics in shopping centers? How would you prefer?
      Successful experiences
      Unsuccessful experiences

How could you describe the role of atmospherics in comparison with other characteristics as accessibility, services, security, and retail supply? Would you prefer to see things differently?

In which way/ with which measures should the market imply atmospherics into shopping centers with the purpose to meet the needs of consumers? Are that only existing measures or is there a new trend upcoming?

Roughly, there are 37measures which contribute to atmospherics in shopping centers [Including measures as discussed during this interview]. I would like to know the expected effect of each measure (large or small) / I would like you to rank the measures in order of importance. Starting with most important (1) and ending with less important (37)

Indoor/ Outdoor Accessibility Advertisement Air conditioned Architecture Background noise Bars and Restaurants Color pavement Color facades Crowdedness Decoration Entrances Flooring Furniture Greenery Height buildings Location Material pavement Material facades Music Tidiness Other visitors Parking Shops Amount of light Smell Shape facades Shop windows Size of the centre Social Interactions Spaciousness Temperature Traffic Flow Width street Width – Height ratio

Do you like to add something to this conversation or do you want to make a point what could contribute to the research? Many thanks. In due course I will send you the results.

The surveys of Maastricht and 's-Hertogenbosch can be found on the following pages.

ENQUÊTE AFSTUDEERONDERZOEK CONSUMENTENBELEVING

Wij zijn vier afstudeerstudenten aan de Technische Universiteit en willen u voor ons afstudeerproject graag een aantal vragen stellen. **De enquête betreft deze specifieke locatie.**

Bij voorbaat vriendelijk bedankt. Jeffrey, Wouter, Tim en Rick

1. Winkelmotivatie

1. Het doel van mijn bezoek is:
O   Doelgericht winkelen
O   Winkelen voor plezier
O   Beide
O   Anders, namelijk: ………

2. Toen ik ging winkelen, was mijn humeur:
Slecht   O   O   O   O   O   O   O   Goed

In hoeverre bent u het eens met de volgende stellingen?

	Oneens			0			Eens
3. Het winkelen is een waar genoegen	O	O	O	O	O	O	O
4. Vergeleken met andere dingen die ik had kunnen doen, is de tijd die ik aan het winkelen besteed werkelijk plezierig	O	O	O	O	O	O	O
5. Ik vind het leuk om me te verdiepen in spannende nieuwe producten	O	O	O	O	O	O	O
6. Het winkelen geeft mij een avontuurlijk gevoel	O	O	O	O	O	O	O

Vul de volgende drie vragen <u>alleen in als u klaar bent met winkelen</u>.

	Oneens			0			Eens
7. Met het winkelen heb ik precies bereikt wat ik wilde	O	O	O	O	O	O	O
8. Ik heb niet kunnen kopen wat ik werkelijk nodig had	O	O	O	O	O	O	O
9. Tijdens het winkelen heb ik precies die dingen gevonden waarnaar ik op zoek was	O	O	O	O	O	O	O

In welke mate zijn volgende aspecten van toepassing op wat u ervaart / heeft ervaren op deze locatie. Het gaat niet om de winkels die u ziet, maar om de omgeving.

	Helemaal niet van toepassing ↓			0		Helemaal van toepassing ↓		
10. Oncomfortabel	O	O	O	O	O	O	O	Comfortabel
11. Deprimerend	O	O	O	O	O	O	O	Vrolijk
12. Kleurloos	O	O	O	O	O	O	O	Kleurrijk
13. Saai/Eentonig	O	O	O	O	O	O	O	Levendig

2. Beoordeling aspecten

Hoe beoordeelt u de volgende punten over deze specifieke locatie:

	--			0			++
14. Bereikbaarheid.	O	O	O	O	O	O	O
15. Winkelaanbod.	O	O	O	O	O	O	O
16. De horecagelegenheden (indien aanwezig).	O	O	O	O	O	O	O
17. Vorm van de gevels.	O	O	O	O	O	O	O
18. Materiaalgebruik gevels.	O	O	O	O	O	O	O
19. Materiaalgebruik bestrating.	O	O	O	O	O	O	O
20. Kleurgebruik gevels.	O	O	O	O	O	O	O
21. Kleurgebruik bestrating.	O	O	O	O	O	O	O
22. Hoeveelheid licht.	O	O	O	O	O	O	O
23. De achtergrondgeluiden.	O	O	O	O	O	O	O
24. De muziek (indien aanwezig).	O	O	O	O	O	O	O
25. De geur in de winkelstraat.	O	O	O	O	O	O	O
26. Het feit dat de straat niet/wel overdekt is.	O	O	O	O	O	O	O
27. Groenvoorzieningen.	O	O	O	O	O	O	O
28. Meubilair in de straat.	O	O	O	O	O	O	O
29. Winkeletalages.	O	O	O	O	O	O	O
30. De reclame in de straat.	O	O	O	O	O	O	O
31. Netheid.	O	O	O	O	O	O	O
32. Breedte van de winkelstraat.	O	O	O	O	O	O	O
33. Hoogte van de gebouwen in de winkelstraat.	O	O	O	O	O	O	O
34. Breedte-hoogteverhouding winkelstraat.	O	O	O	O	O	O	O
35. Het druktebeeld.	O	O	O	O	O	O	O
36. De andere bezoekers.	O	O	O	O	O	O	O
Vraag 75 en 76 alleen van toepassing op Entre Deux en/of Mosea Forum:							
75. Kleur van het licht (Entre Deux en Mosea Forum)	O	O	O	O	O	O	O
76. Hoogteverschil (Entre Deux)	O	O	O	O	O	O	O

APPENDICES - Environmental influences on consumer behaviour

3. Algemeen oordeel

Hoe bekend bent u met de onderstaande locaties?

	Onbekend			0			Bekend
37. Maastrichter brugstraat	O	O	O	O	O	O	O
38. Stokstraat	O	O	O	O	O	O	O
39. Entre Deux	O	O	O	O	O	O	O
40. Mosea Forum	O	O	O	O	O	O	O

Wat is uw algemeen oordeel van de onderstaande locaties?

	Negatief			0			Positief
41. Maastrichter brugstraat	O	O	O	O	O	O	O
42. Stokstraat	O	O	O	O	O	O	O
43. Entre Deux	O	O	O	O	O	O	O
44. Mosea Forum	O	O	O	O	O	O	O

45. Op welke locatie verblijft u het liefst? Geef dit aan met de cijfers 1 (eerste keuze) t/m 4 (laatste keuze).

………. Maastrichter Brugstraat

………. Stokstraat

………. Entre Deux

………. Mosea Forum

46. Wat is de voornaamste reden voor uw voorkeur?

………

………

47. Welke locatie vindt u het meest sfeervol? Geef dit aan met de cijfers 1 (eerste keuze) t/m 4 (laatste keuze).

………. Maastrichter Brugstraat

………. Stokstraat

………. Entre Deux

………. Mosea Forum

48. En waarom?

………

4. Sense of place

In hoeverre bent u het eens met de volgende stellingen?

	Oneens			0			Eens
49. Deze locatie geeft mij een ontspannen/relaxed gevoel.	O	O	O	O	O	O	O
50. Deze locatie weerspiegelt het soort persoon dat ik ben.	O	O	O	O	O	O	O
51. Wat mij betreft zijn er betere locaties dan deze locatie.	O	O	O	O	O	O	O
52. Deze locatie geeft mij een gelukkig/blij gevoel.	O	O	O	O	O	O	O
53. Deze locatie geeft mij het gevoel dat ik mezelf kan zijn.	O	O	O	O	O	O	O
54. Deze locatie vervult mijn behoefte beter dan elke andere locatie.	O	O	O	O	O	O	O
55. Deze locatie is een van mijn favoriete locaties.	O	O	O	O	O	O	O
56. Deze locatie zegt weinig over wie ik ben.	O	O	O	O	O	O	O
57. Deze locatie is de beste locatie om de dingen te doen waar ik het meest van geniet.	O	O	O	O	O	O	O
58. Ik zou deze locatie niet missen als deze er niet meer zou zijn.	O	O	O	O	O	O	O
59. Deze locatie is een goede afspiegeling van mijn identiteit.	O	O	O	O	O	O	O
60. Deze locatie is een goede locatie om de dingen te doen die ik het leukst vind.	O	O	O	O	O	O	O

5. Persoonsinformatie

61. Wat is uw leeftijd?

…….. jaar

62. Wat is uw geslacht?
O Man   O Vrouw

63. Wat is uw postcode?

……………………………………

64. Wat is uw huishoudensamenstelling?
O Alleenstaand zonder kinderen   O Alleenstaand met …. kinderen
O Samenwonend zonder kinderen   O Samenwonend met …. kinderen
O Student   O Anders: ……………………..

65. Wat is uw opleidingsniveau
O Basisonderwijs
O Middelbaar onderwijs
O MBO
O HBO
O Universiteit

66. Wat is uw beroepsactiviteit?
O Student   O Werkend   O Werkloos   O Gepensioneerd

67. Wat is het netto maandinkomen van uw huishouden?
O € 1.200 of minder per maand
O € 1.200 tot € 2.000 per maand
O € 2.000 tot € 4.000 per maand
O € 4.000 tot € 6.000 per maand
O € 6.000 tot € 8.000 per maand
O € 8.000 of meer per maand

68. Met wie bent u hier?
O Alleen   O Familie   O Vrienden

69. Samenstelling groep aanwezigen (<u>inclusief</u> uzelf):

Aantal vrouw(en): ……..   Aantal man(nen): ……..   Aantal kind(eren): ……..

70. Hoe bent u hier gekomen?
O Auto   O Fiets   O Openbaar vervoer   O Lopend   O Anders: ……………………..

71. Hoe vaak komt u hier om te winkelen?
O 2x per week of meer   O Wekelijks   O 2x per maand   O Maandelijks   O Minder

Hartelijk bedankt voor uw deelname

Wij danken u hartelijk voor uw deelname aan deze enquête. Mocht u geïnteresseerd zijn in de resultaten, vul dan hier uw e-mailadres in:

……………………………………………………………………………………………………

Invullen door enquêteur

72. Drukte in straat: ………………………………………………………………………… (foto)

73. Weersomstandigheden: ………………………………………………………………… (foto)

00. Volgnummer:

1	……	……	……	……
Stad	Locatie	Datum	Tijd	Enquêteur

Richtlijnen volgnummer
1.   Stad reeds ingevuld (Maastricht = 1)
2.   Locatie als volgt:
      1 = Maastrichter Brugstraat
      2 = Stokstraat
      3 = Entre Deux
      4 = Mosea Forum
3.   Datum als volgt: dag en maand aan elkaar
      →5 juli wordt '0507'
4.   Tijd op het moment van afronden weergeven in uren en minuten
      → 12:34u wordt '1234'
5.   Enquêteurnummer weergeven volgens onderstaande lijst:
      1. Boerebach, Jeffrey
      2. Dijkman, Wouter
      3. Op Heij, Tim
      4. Willems, Rick
      5.
      6.
      7.
      8.

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O   Beide
O   Anders, namelijk: ………

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Slecht   O   O   O   O   O   O   O   Goed

In hoeverre bent u het eens met de volgende stellingen?

	Oneens			0			Eens
3. Het winkelen is een waar genoegen	O	O	O	O	O	O	O
4. Vergeleken met andere dingen die ik had kunnen doen, is de tijd die ik aan het winkelen besteed werkelijk plezierig	O	O	O	O	O	O	O
5. Ik vind het leuk om me te verdiepen in spannende nieuwe producten	O	O	O	O	O	O	O
6. Het winkelen geeft mij een avontuurlijk gevoel	O	O	O	O	O	O	O

Vul de volgende drie vragen <u>alleen in als u klaar bent met winkelen</u>.

	Oneens			0			Eens
7. Met het winkelen heb ik precies bereikt wat ik wilde	O	O	O	O	O	O	O
8. Ik heb niet kunnen kopen wat ik werkelijk nodig had	O	O	O	O	O	O	O
9. Tijdens het winkelen heb ik precies die dingen gevonden waarnaar ik op zoek was	O	O	O	O	O	O	O

In welke mate zijn volgende aspecten van toepassing op wat u ervaart / heeft ervaren op deze locatie. Het gaat niet om de winkels die u ziet, maar om de omgeving.

	Helemaal van toepassing ↓			0			Helemaal van toepassing ↓	
10. Oncomfortabel	O	O	O	O	O	O	O	Comfortabel
11. Deprimerend	O	O	O	O	O	O	O	Vrolijk
12. Kleurloos	O	O	O	O	O	O	O	Kleurrijk
13. Saai/Eentonig	O	O	O	O	O	O	O	Levendig

2. Beoordeling aspecten

Hoe beoordeelt u de volgende punten over deze specifieke locatie:

	--			0			++
14. Bereikbaarheid.	O	O	O	O	O	O	O
15. Winkelaanbod.	O	O	O	O	O	O	O
16. De horecagelegenheden (indien aanwezig).	O	O	O	O	O	O	O
17. Vorm van de gevels.	O	O	O	O	O	O	O
18. Materiaalgebruik gevels.	O	O	O	O	O	O	O
19. Materiaalgebruik bestrating.	O	O	O	O	O	O	O
20. Kleurgebruik gevels.	O	O	O	O	O	O	O
21. Kleurgebruik bestrating.	O	O	O	O	O	O	O
22. Hoeveelheid licht.	O	O	O	O	O	O	O
23. De achtergrondgeluiden.	O	O	O	O	O	O	O
24. De muziek (indien aanwezig).	O	O	O	O	O	O	O
25. De geur in de winkelstraat.	O	O	O	O	O	O	O
26. Het feit dat de straat niet/wel overdekt is.	O	O	O	O	O	O	O
27. Groenvoorzieningen.	O	O	O	O	O	O	O
28. Meubilair in de straat.	O	O	O	O	O	O	O
29. Winkeletalages.	O	O	O	O	O	O	O
30. De reclame in de straat.	O	O	O	O	O	O	O
31. Netheid.	O	O	O	O	O	O	O
32. Breedte van de winkelstraat.	O	O	O	O	O	O	O
33. Hoogte van de gebouwen in de winkelstraat.	O	O	O	O	O	O	O
34. Breedte-hoogteverhouding winkelstraat.	O	O	O	O	O	O	O
35. Het druktebeeld.	O	O	O	O	O	O	O
36. De andere bezoekers.	O	O	O	O	O	O	O
Vraag 75 en 76 alleen van toepassing op winkelcentrum Arena							
75. Kleur van het licht	O	O	O	O	O	O	O
76. Hoogteverschil	O	O	O	O	O	O	O

3. Algemeen oordeel

Hoe bekend bent u met de onderstaande locaties?

	Onbekend			0			Bekend
37. Hinthamerstraat	O	O	O	O	O	O	O
38. Kerkstraat	O	O	O	O	O	O	O
39. Arena	O	O	O	O	O	O	O
40. Burgemeester Loeffplein	O	O	O	O	O	O	O

Wat is uw algemeen oordeel van de onderstaande locaties?

	Negatief			0			Positief
41. Hinthamerstraat	O	O	O	O	O	O	O
42. Kerkstraat	O	O	O	O	O	O	O
43. Arena	O	O	O	O	O	O	O
44. Burgemeester Loeffplein	O	O	O	O	O	O	O

45. Op welke locatie verblijft u het liefst? Geef dit aan met de cijfers 1 (eerste keuze) t/m 4 (laatste keuze).

………. Hinthamerstraat

………. Kerkstraat

………. Arena

………. Burgemeester Loeffplein

46. Wat is de voornaamste reden voor uw voorkeur?

…….

…….

47. Welke locatie vindt u het meest sfeervol? Geef dit aan met de cijfers 1 (eerste keuze) t/m 4 (laatste keuze).

………. Hinthamerstraat

………. Kerkstraat

………. Arena

………. Burgemeester Loeffplein

48. En waarom?

…….

4. Sense of place

In hoeverre bent u het eens met de volgende stellingen?

	Oneens			0			Eens
49. Deze locatie geeft mij een ontspannen/relaxed gevoel.	O	O	O	O	O	O	O
50. Deze locatie weerspiegelt het soort persoon dat ik ben.	O	O	O	O	O	O	O
51. Wat mij betreft zijn er betere locaties dan deze locatie.	O	O	O	O	O	O	O
52. Deze locatie geeft mij een gelukkig/blij gevoel.	O	O	O	O	O	O	O
53. Deze locatie geeft mij het gevoel dat ik mezelf kan zijn.	O	O	O	O	O	O	O
54. Deze locatie vervult mijn behoefte beter dan elke andere locatie.	O	O	O	O	O	O	O
55. Deze locatie is een van mijn favoriete locaties.	O	O	O	O	O	O	O
56. Deze locatie zegt weinig over wie ik ben.	O	O	O	O	O	O	O
57. Deze locatie is de beste locatie om de dingen te doen waar ik het meest van geniet.	O	O	O	O	O	O	O
58. Ik zou deze locatie niet missen als deze er niet meer zou zijn.	O	O	O	O	O	O	O
59. Deze locatie is een goede afspiegeling van mijn identiteit.	O	O	O	O	O	O	O
60. Deze locatie is een goede locatie om de dingen te doen die ik het leukst vind.	O	O	O	O	O	O	O

5. Persoonsinformatie

61. Wat is uw leeftijd?

…….. jaar

62. Wat is uw geslacht?
O Man   O Vrouw

63. Wat is uw postcode?

…………………………………

64. Wat is uw huishoudensamenstelling?
O Alleenstaand zonder kinderen   O Alleenstaand met …. kinderen
O Samenwonend zonder kinderen   O Samenwonend met …. kinderen
O Student   O Anders: ………………….

65. Wat is uw opleidingsniveau
O Basisonderwijs
O Middelbaar onderwijs
O MBO
O HBO
O Universiteit

66. Wat is uw beroepsactiviteit?
O Student   O Werkend   O Werkloos   O Gepensioneerd

67. Wat is het netto maandinkomen van uw huishouden?
O € 1.200 of minder per maand
O € 1.200 tot € 2.000 per maand
O € 2.000 tot € 4.000 per maand
O € 4.000 tot € 6.000 per maand
O € 6.000 tot € 8.000 per maand
O € 8.000 of meer per maand

68. Met wie bent u hier?
O Alleen   O Familie   O Vrienden

69. Samenstelling groep aanwezigen (inclusief uzelf):

Aantal vrouw(en): ……..   Aantal man(nen): ……..   Aantal kind(eren): ……..

70. Hoe bent u hier gekomen?
O Auto   O Fiets   O Openbaar vervoer   O Lopend   O Anders: ………………….

71. Hoe vaak komt u hier om te winkelen?
O 2x per week of meer   O Wekelijks   O 2x per maand   O Maandelijks   O Minder

Hartelijk bedankt voor uw deelname

Wij danken u hartelijk voor uw deelname aan deze enquête. Mocht u geïnteresseerd zijn in de resultaten, vul dan hier uw e-mailadres in:

……………………………………………………………………………………………………

Invullen door enquêteur

72. Drukte in straat: …………………………………………………………………… (foto)

73. Weersomstandigheden: …………………………………………………………………. (foto)

00. Volgnummer:

2	……	……	……	……
Stad	Locatie	Datum	Tijd	Enquêteur

<u>Richtlijnen volgnummer</u>
1. Stad reeds ingevuld ('s-Hertogenbosch = 2)
2. Locatie als volgt:
   1 = Hinthamerstraat
   2 = Kerkstraat
   3 = Arena
   4 = Burgemeester Loeffplein
3. Datum als volgt: dag en maand aan elkaar
   →5 juli wordt '0507'
4. Tijd op het moment van afronden weergeven in uren en minuten
   → 12:34u wordt '1234'
5. Enquêteurnummer weergeven volgens onderstaande lijst:
   1. Boerebach, Jeffrey
   2. Dijkman, Wouter
   3. Op Heij, Tim
   4. Willems, Rick
   5.
   6.
   7.
   8.

APPENDIX C. SURVEY MANUAL

Handleiding enquête

Dit onderzoek dient een indicatie te geven hoe de consument de betreffende winkellocatie ervaart. Hierbij wordt enerzijds onderscheid gemaakt tussen historische en moderne – of in vaktermen 'planmatige' – settings, de motivatie van de consument om de locatie te bezoeken en de overeenkomsten of verschillen die tot verschillende typen consumenten behoren. De focus ligt op de fysieke kenmerken van de omgeving en deze komen derhalve duidelijk naar voren in de enquête.

De enquête is duidelijk opgebouwd en maakt voornamelijk gebruik van de zogeheten 'Likert' schalen. Deze handleiding beschrijft stap voor stap hoe de enquête afgenomen dient te worden. De volgende stappen worden doorlopen:
- Aanspreken respondent en eventueel non-respons;
- Invullen vragenlijst;
- Vragen voor motiveringen (indien van toepassing);

1. Aanspreken respondent
Mogelijke manier van aanspreken:
"Goedemiddag, ik ben ……. . Student van de Technische Universiteit Eindhoven doen momenteel onderzoek onder bezoekers van deze locatie. Zou ik u hier een aantal vragen voor mogen stellen? Het duurt wellicht enkele minuten en u zou ons er enorm mee helpen.

Non-respons:
Als de respondent weigert, dienen de volgende gegevens op het aparte 'non-responseformulier' ingevuld te worden:
- Geslacht;
- Leeftijd (geschat) volgens de schalen: jonger dan 18, 19-25, 26-35, 36-45, 46-55, 56-65, 65 of ouder;
- Groepsgrootte, aantal volwassen en aantal kinderen (jonger dan 18).
-

2. Invullen vragenlijst
Het invullen van de enquête wijst voor zich. Desondanks enkele richtlijnen per onderdeel:

1. Winkelmotivatie
Dit onderdeel is bedoeld om te bepalen wat de reden is van de respondent om de locatie te bezoeken. In eerste instantie middels een specifieke vraag (vraag 1) en vervolgens op een meer wetenschappelijke wijze (vraag 3 t/m 9).
De vragen 10 t/m 13 betreffen 'vagere' beoordelingen van de omgeving als voorbereiding op de daaropvolgende specifieke aspecten.

2. Beoordeling aspecten
De vragen 14 t/m 36 en 75 en 76 behandelen meer tastbare aspecten een gaan specifiek over de locatie. Respondenten beoordelen de aspecten op een schaal van zeer negatief (--) tot zeer positief (++).

3. Algemeen oordeel
Hier worden de vier locaties in de stad met elkaar vergeleken. Daarvoor is het eerst noodzakelijk te weten hoe bekend de respondent is met de locaties (vraag 37 t/m 40). De vragen 41 t/m 44 zijn bedoeld om een totaaloordeel te geven van de vier locaties. Vervolgens wordt de respondent gevraagd de locaties te ordenen met de variabelen verblijfsvoorkeur en mate van sfeer als uitgangspunten.

4. Sense of place
De stellingen 49 t/m 60 wijzen voor zich. De respondent geeft hier aan in hoeverre hij/zij het eens is met deze stellingen.

5. Persoonsinformatie
Enkele vragen uit dit gedeelde kan de enquêteur zelf invullen. De anderen worden aan de respondent gevraagd.

6. Bedanken voor deelname
LET OP: dit onderdeel uitvoeren nadat de respondent om motivaties voor extreme waarden (zie deze handleiding onderdeel '3. Motiveringen'.

Na het invullen van de enquête dient de respondent vriendelijk bedankt te worden. Wanneer hij/zij inzicht wil hebben in de resultaten, dient hij/zij zijn e-mailadres in te vullen.

7. Enquêtegegevens
Middels foto's en tekst worden het druktebeeld en de weersomstandigheden vastgelegd.

Volgnummer
Zowel op de eerste als de laatste pagina van de enquête dient het volgnummer te worden ingevuld. Dit is van groot belang om de data te kunnen ordenen bij verwerking. Het volgnummer bestaat uit vijf delen:

1. Stad	2. Locatie	3. Datum	4. Tijd	5. Enquêteur

1. Reeds ingevuld
   (Maastricht = 1, 's-Hertogenbosch = 2);
2. Locatie
   (Maastricht → Maastrichter Brugstraat = 1, Stokstraat = 2, Entre Deux = 3, Mosea Forum = 4,
   's Hertogenbosch → ….. = 1, ….. = 2, …… = 3, …… = 4)
4. Datum
   in vier cijfers → 5 juli wordt 0507
5. Tijd
   in vier cijfers de tijd van <u>afronden</u> enquête → 12:34u wordt 1234
6. Enquêteur
   cijfer volgens lijst bij enquêteformulier.

3. Motiveringen
Nadat de enquête is doorlopen, is het relevant te weten waarom respondenten voor eventuele extreme waarden hebben gekozen. Dit gebeurt na afloop van de enquête zodat de respondent niet beïnvloed wordt tijdens de enquête. De buitenste twee opties op de Likert schalen behoren tot de extreme waarden:

```
  --              0              ++
 O    O      O    O    O     O    O
```

Het doorvragen met de vraag 'Waarom?' is alleen nodig bij '2. Beoordeling aspecten'.

INDEPENDENT VARIABLES	VALUE OPTIONS
1. Accessibility	
Distance to parking facility	Real value (m.)
Distance to public transport	Real Value (m.)
2. Shops	
Fashion and luxury	Amount of shops in the area
Daily	Amount of shops in the area
Other	
3. Leisure and restaurants	Amount of facilities
4. Shape of facades	1. divers (historical) / 2. clean and uniform
5. Material of the facades	1. Historical / 2. contemporary
6. Material of the pavements	1. Rough/ 2. Smooth
7. Colour of the facades	1. Dark / 2. Mixed / 3. Bright
8. Colour of the pavements	1. Dark / 2. Mixed / 3. Bright
9. Amount of light	1. Low / 2. Average / 3. High
10. Background noise	1. Low / 2. Average / 3. High
11. Music	1. No / 2. Yes
12. Smell	1. Bad / 2. None / 3. Good
13. Indoor	1. No / 2. Yes
14. Greenary	Amount of trees/ bushes
15. Street furniture	1. No / 2. Yes
16. Shop Windows	1. Discrete / 2. Neutral / 3. Striking
17. Advertisement signs	1. Discrete / 2. Neutral / 3. Striking
18. Tidiness	1. Bad / 2. Average / 3. Good
19. Width of the street	Real value (m.)
20. Height of the building	Number of storeys
21. Width to height ratio	With street divided by number storeys
22. Crowdeness	1. Quiet / 2. Average / 3. Crowded
23. Other Visitors	No scale
24. Colour of the light	1. Cool / 2. Average / 3. Warm
25. Elevation	1. No / 2. Yes
26. Weather	1.Rainy / 2.Clouded / 3. Partially clouded / 4. Sunny

Description of the non-objective measurable variables

The description of the non-objective measurable variables will be explained based on photographs of several survey locations in both Maastricht and 's-Hertogenbosch.

Stokstraat (Maastricht)

4. Shape of facades: divers (historical)
5. Material of the facades: historical
6. Material of the pavements: rough
7. Colour of the facades: mixed
8. Colour of the pavements: bright
16. Shop Windows: discrete
17. Advertisement signs: discrete
18. Tidiness: good

Mosae Forum (Maastricht)

4. Shape of facades: clean and uniform
5. Material of the facades: contemporary
6. Material of the pavements: smooth
7. Colour of the facades: bright
8. Colour of the pavements: bright
16. Shop Windows: striking
17. Advertisement signs: discrete
18. Tidiness: good

Hinthamerstraat ('s-Hertogenbosch)

4. Shape of facades: historical
5. Material of the facades: historical
6. Material of the pavements: smooth
7. Colour of the facades: mixed
8. Colour of the pavements: mixed
16. Shop Windows: neutral
17. Advertisement signs: striking
18. Tidiness: average

E1. Sub-centers

E2. Footfall

E3. Segmentation

E4. Branches

APPENDICES - Environmental influences on consumer behaviour

F1. Sub-centers

F2. Footfall

F3. Segmentation

F4. Branches

APPENDICES - Environmental influences on consumer behaviour
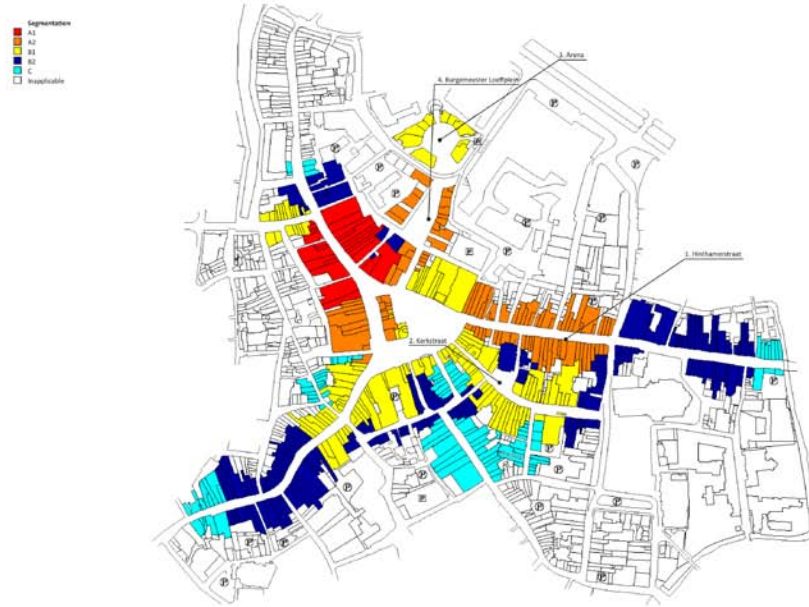
1	Accessibility													Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive	
Maastrichter Brugstraat	0	0%	1	2%	5	2%	7	10%	22	17%	53	45%	21	24%	109
Stokstraat	2	2%	3	0%	4	4%	23	14%	23	12%	42	40%	29	28%	126
Entre Deux	2	2%	3	3%	4	3%	10	10%	41	24%	32	38%	23	19%	115
Mosea Forum	1	0%	2	0%	1	4%	12	10%	13	24%	51	34%	44	28%	124
Maastricht Total	**5**	**1%**	**9**	**1%**	**14**	**3%**	**52**	**11%**	**99**	**19%**	**178**	**39%**	**117**	**25%**	**474**
Hinthamerstraat	0	1%	2	2%	1	4%	8	13%	25	24%	44	29%	29	28%	109
Kerkstraat	0	3%	3	0%	3	5%	7	17%	23	14%	39	48%	30	33%	105
Arena	2	2%	4	3%	6	11%	8	13%	30	30%	34	23%	31	18%	115
Burgemeester Loeffplein	0	0%	3	4%	3	3%	10	17%	26	29%	43	26%	30	21%	115
s-Hertogenbosch Total	**2**	**1%**	**12**	**2%**	**13**	**5%**	**33**	**14%**	**104**	**26%**	**160**	**30%**	**120**	**22%**	**444**
Total	**7**	**1%**	**21**	**2%**	**27**	**4%**	**85**	**13%**	**203**	**22%**	**338**	**35%**	**237**	**24%**	**918**

2	Shops													Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive	
Maastrichter Brugstraat	0	0%	2	2%	2	2%	11	10%	19	17%	49	45%	26	24%	109
Stokstraat	3	2%	0	0%	5	4%	18	14%	15	12%	50	40%	35	28%	126
Entre Deux	2	2%	3	3%	4	3%	12	10%	28	24%	44	38%	22	19%	115
Mosea Forum	0	0%	0	0%	5	4%	12	10%	30	24%	42	34%	35	28%	124
Maastricht Total	**5**	**1%**	**5**	**1%**	**16**	**3%**	**53**	**11%**	**92**	**19%**	**185**	**39%**	**118**	**25%**	**474**
Hinthamerstraat	1	1%	2	2%	4	4%	14	13%	26	24%	32	29%	30	28%	109
Kerkstraat	0	3%	0	0%	1	5%	13	17%	21	14%	46	48%	24	33%	105
Arena	2	2%	3	3%	13	11%	15	13%	34	30%	27	23%	21	18%	115
Burgemeester Loeffplein	0	0%	5	4%	3	3%	20	17%	33	29%	30	26%	24	21%	115
s-Hertogenbosch Total	**3**	**1%**	**10**	**2%**	**21**	**5%**	**62**	**14%**	**114**	**26%**	**135**	**30%**	**99**	**22%**	**444**
Total	**8**	**1%**	**15**	**2%**	**37**	**4%**	**115**	**13%**	**206**	**22%**	**320**	**35%**	**217**	**24%**	**918**

3	Restaurants/leisure													Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive	
Maastrichter Brugstraat	5	5%	2	2%	9	8%	11	10%	19	17%	41	38%	22	20%	109
Stokstraat	3	2%	3	2%	5	4%	27	21%	17	13%	34	27%	37	29%	126
Entre Deux	2	2%	10	9%	13	11%	21	18%	17	15%	30	26%	22	19%	115
Mosea Forum	2	2%	1	1%	17	14%	25	20%	23	19%	27	22%	29	23%	124
Maastricht Total	**12**	**3%**	**16**	**3%**	**44**	**9%**	**84**	**18%**	**76**	**16%**	**132**	**28%**	**110**	**23%**	**474**
Hinthamerstraat	1	1%	3	3%	5	5%	20	18%	19	17%	33	30%	28	26%	109
Kerkstraat	2	2%	3	3%	4	4%	14	13%	12	11%	42	40%	28	27%	105
Arena	2	2%	7	6%	10	9%	25	22%	26	23%	29	25%	16	14%	115
Burgemeester Loeffplein	5	4%	5	4%	10	9%	19	17%	19	17%	29	25%	28	24%	115
s-Hertogenbosch Total	**10**	**2%**	**18**	**4%**	**29**	**7%**	**78**	**18%**	**76**	**17%**	**133**	**30%**	**100**	**23%**	**444**
Total	**22**	**2%**	**34**	**4%**	**73**	**8%**	**162**	**18%**	**152**	**17%**	**265**	**29%**	**210**	**23%**	**918**

4	Shape facades														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	1	1%	0	0%	4	4%	12	11%	19	17%	35	32%	38	35%	109
Stokstraat	0	0%	0	0%	0	0%	6	5%	9	7%	45	36%	66	52%	126
Entre Deux	0	0%	1	1%	4	3%	21	18%	29	25%	37	32%	23	20%	115
Mosea Forum	2	2%	7	6%	6	5%	22	18%	25	20%	42	34%	20	16%	124
Maastricht Total	**3**	**1%**	**8**	**2%**	**14**	**3%**	**61**	**13%**	**82**	**17%**	**159**	**34%**	**147**	**31%**	**474**
Hinthamerstraat	1	1%	1	1%	2	2%	15	14%	23	21%	38	35%	29	27%	109
Kerkstraat	1	1%	0	0%	1	1%	13	12%	23	22%	35	33%	32	30%	105
Arena	3	3%	9	8%	16	14%	26	23%	20	17%	22	19%	19	17%	115
Burgemeester Loeffplein	7	6%	9	8%	10	9%	25	22%	26	23%	23	20%	15	13%	115
s-Hertogenbosch Total	**12**	**1%**	**19**	**2%**	**29**	**3%**	**79**	**14%**	**92**	**18%**	**118**	**36%**	**95**	**33%**	**444**
Total	**15**	**2%**	**27**	**3%**	**43**	**5%**	**140**	**15%**	**174**	**19%**	**277**	**30%**	**242**	**26%**	**918**

5	Material facades														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	2	2%	4	4%	17	16%	21	19%	40	37%	25	23%	109
Stokstraat	0	0%	1	1%	1	1%	8	6%	15	12%	44	35%	57	45%	126
Entre Deux	0	0%	4	3%	5	4%	22	19%	31	27%	35	30%	18	16%	115
Mosea Forum	4	3%	4	3%	5	4%	28	23%	26	21%	42	34%	15	12%	124
Maastricht Total	**4**	**1%**	**11**	**2%**	**15**	**3%**	**75**	**16%**	**93**	**20%**	**161**	**34%**	**115**	**24%**	**474**
Hinthamerstraat	1	1%	0	0%	5	5%	21	19%	26	24%	35	32%	21	19%	109
Kerkstraat	0	0%	0	0%	2	2%	24	23%	27	26%	30	29%	22	21%	105
Arena	2	2%	5	4%	15	13%	28	24%	26	23%	25	22%	14	12%	115
Burgemeester Loeffplein	5	4%	8	7%	13	11%	26	23%	31	27%	22	19%	10	9%	115
s-Hertogenbosch Total	**8**	**2%**	**13**	**3%**	**35**	**8%**	**99**	**22%**	**110**	**25%**	**112**	**25%**	**67**	**15%**	**444**
Total	**12**	**1%**	**24**	**3%**	**50**	**5%**	**174**	**19%**	**203**	**22%**	**273**	**30%**	**182**	**20%**	**918**

6	Material pavement														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	4	4%	5	5%	11	10%	22	20%	22	20%	26	24%	19	17%	109
Stokstraat	7	6%	9	7%	13	10%	21	17%	23	18%	29	23%	24	19%	126
Entre Deux	7	6%	8	7%	13	11%	20	17%	28	24%	28	24%	11	10%	115
Mosea Forum	6	5%	8	6%	9	7%	34	27%	28	23%	22	18%	17	14%	124
Maastricht Total	**24**	**5%**	**30**	**6%**	**46**	**10%**	**97**	**20%**	**101**	**21%**	**105**	**22%**	**71**	**15%**	**474**
Hinthamerstraat	1	1%	1	1%	10	9%	20	18%	35	32%	32	29%	10	9%	109
Kerkstraat	4	4%	1	1%	8	8%	21	20%	22	21%	34	32%	15	14%	105
Arena	1	1%	3	3%	10	9%	27	23%	30	26%	31	27%	13	11%	115
Burgemeester Loeffplein	4	3%	3	3%	19	17%	22	19%	30	26%	29	25%	8	7%	115
s-Hertogenbosch Total	**10**	**5%**	**8**	**7%**	**47**	**10%**	**90**	**22%**	**117**	**23%**	**126**	**24%**	**46**	**16%**	**444**
Total	**34**	**4%**	**38**	**4%**	**93**	**10%**	**187**	**20%**	**218**	**24%**	**231**	**25%**	**117**	**13%**	**918**

7	Color facades													Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	2	2%	8	7%	22	20%	23	21%	32	29%	22	20%	109
Stokstraat	2	2%	1	1%	8	6%	11	9%	23	18%	44	35%	37	29%	126
Entre Deux	2	2%	4	3%	21	18%	20	17%	31	27%	26	23%	11	10%	115
Mosea Forum	8	6%	6	5%	10	8%	35	28%	31	25%	21	17%	13	10%	124
Maastricht Total	**12**	**3%**	**13**	**3%**	**47**	**10%**	**88**	**19%**	**108**	**23%**	**123**	**26%**	**83**	**18%**	**474**
Hinthamerstraat	1	1%	1	1%	11	10%	24	22%	37	34%	27	25%	8	7%	109
Kerkstraat	2	2%	2	2%	7	7%	21	20%	26	25%	28	27%	19	18%	105
Arena	2	2%	8	7%	20	17%	29	25%	23	20%	22	19%	11	10%	115
Burgemeester Loeffplein	5	4%	10	9%	18	16%	29	25%	29	25%	17	15%	7	6%	115
s-Hertogenbosch Total	**10**	**3%**	**21**	**3%**	**56**	**11%**	**103**	**20%**	**115**	**24%**	**94**	**28%**	**45**	**19%**	**444**
Total	**22**	**2%**	**34**	**4%**	**103**	**11%**	**191**	**21%**	**223**	**24%**	**217**	**24%**	**128**	**14%**	**918**

8	Color pavement													Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	4	4%	6	6%	10	9%	21	19%	30	28%	25	23%	13	12%	109
Stokstraat	4	3%	2	2%	9	7%	28	22%	20	16%	35	28%	28	22%	126
Entre Deux	2	2%	3	3%	21	18%	23	20%	30	26%	23	20%	13	11%	115
Mosea Forum	8	6%	7	6%	10	8%	36	29%	27	22%	24	19%	12	10%	124
Maastricht Total	**18**	**4%**	**18**	**4%**	**50**	**11%**	**108**	**23%**	**107**	**23%**	**107**	**23%**	**66**	**14%**	**474**
Hinthamerstraat	0	0%	3	3%	14	13%	24	22%	38	35%	26	24%	4	4%	109
Kerkstraat	2	2%	1	1%	5	5%	25	24%	28	27%	29	28%	15	14%	105
Arena	2	2%	4	3%	15	13%	26	23%	29	25%	29	25%	10	9%	115
Burgemeester Loeffplein	4	3%	5	4%	15	13%	23	20%	33	29%	23	20%	12	10%	115
s-Hertogenbosch Total	**8**	**2%**	**13**	**3%**	**49**	**11%**	**98**	**22%**	**128**	**29%**	**107**	**24%**	**41**	**9%**	**444**
Total	**26**	**3%**	**31**	**3%**	**99**	**11%**	**206**	**22%**	**235**	**26%**	**214**	**23%**	**107**	**12%**	**918**

9	Amount of light													Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	1	1%	0	0%	1	1%	11	10%	36	33%	37	34%	23	21%	109
Stokstraat	0	0%	5	4%	3	2%	13	10%	32	25%	39	31%	34	27%	126
Entre Deux	1	1%	0	0%	7	6%	18	16%	30	26%	32	28%	27	23%	115
Mosea Forum	2	2%	0	0%	2	2%	18	15%	20	16%	53	43%	29	23%	124
Maastricht Total	**4**	**1%**	**5**	**1%**	**13**	**3%**	**60**	**13%**	**118**	**25%**	**161**	**34%**	**113**	**24%**	**474**
Hinthamerstraat	0	0%	1	1%	3	3%	14	13%	27	25%	50	46%	14	13%	109
Kerkstraat	1	1%	0	0%	2	2%	15	14%	23	22%	38	36%	26	25%	105
Arena	0	0%	0	0%	4	3%	13	11%	17	15%	57	50%	24	21%	115
Burgemeester Loeffplein	0	0%	1	1%	5	4%	27	23%	33	29%	34	30%	15	13%	115
s-Hertogenbosch Total	**1**	**0%**	**2**	**0%**	**14**	**3%**	**69**	**16%**	**100**	**23%**	**179**	**40%**	**79**	**18%**	**444**
Total	**5**	**1%**	**7**	**1%**	**27**	**3%**	**129**	**14%**	**218**	**24%**	**340**	**37%**	**192**	**21%**	**918**

10	Background noise														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	1	1%	2	2%	9	8%	25	23%	21	19%	36	33%	15	14%	109
Stokstraat	1	1%	2	2%	7	6%	28	22%	26	21%	33	26%	29	23%	126
Entre Deux	6	5%	4	3%	15	13%	36	31%	28	24%	17	15%	9	8%	115
Mosea Forum	6	5%	2	2%	4	3%	44	35%	30	24%	24	19%	14	11%	124
Maastricht Total	**14**	**3%**	**10**	**2%**	**35**	**7%**	**133**	**28%**	**105**	**22%**	**110**	**23%**	**67**	**14%**	**474**
Hinthamerstraat	0	0%	1	1%	7	6%	39	36%	28	26%	23	21%	11	10%	109
Kerkstraat	3	3%	1	1%	2	2%	25	24%	32	30%	27	26%	15	14%	105
Arena	2	2%	4	3%	8	7%	33	29%	26	23%	28	24%	14	12%	115
Burgemeester Loeffplein	6	5%	9	8%	14	12%	42	37%	26	23%	11	10%	7	6%	115
s-Hertogenbosch Total	**11**	**3%**	**15**	**2%**	**31**	**8%**	**139**	**30%**	**112**	**24%**	**89**	**25%**	**47**	**15%**	**444**
Total	**25**	**3%**	**25**	**3%**	**66**	**7%**	**272**	**30%**	**217**	**24%**	**199**	**22%**	**114**	**12%**	**918**

11	Music														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	7	7%	7	7%	6	6%	32	31%	16	16%	22	22%	12	12%	102
Stokstraat	8	7%	2	2%	5	5%	65	60%	15	14%	6	6%	7	6%	108
Entre Deux	6	5%	7	6%	13	12%	47	42%	20	18%	11	10%	8	7%	112
Mosea Forum	8	7%	1	1%	7	6%	67	58%	17	15%	8	7%	8	7%	116
Maastricht Total	**29**	**7%**	**17**	**4%**	**31**	**7%**	**211**	**48%**	**68**	**16%**	**47**	**11%**	**35**	**8%**	**438**
Hinthamerstraat	2	2%	5	5%	4	4%	50	49%	23	22%	12	12%	7	7%	103
Kerkstraat	4	4%	2	2%	6	6%	34	34%	20	20%	19	19%	14	14%	99
Arena	7	8%	6	7%	8	9%	41	47%	7	8%	12	14%	6	7%	87
Burgemeester Loeffplein	11	10%	4	4%	6	6%	61	56%	16	15%	6	6%	5	5%	109
s-Hertogenbosch Total	**24**	**6%**	**17**	**4%**	**24**	**6%**	**186**	**47%**	**66**	**17%**	**49**	**12%**	**32**	**8%**	**398**
Total	**53**	**6%**	**34**	**4%**	**55**	**7%**	**397**	**47%**	**134**	**16%**	**96**	**11%**	**67**	**8%**	**836**

12	Smell														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	1	1%	4	4%	3	3%	28	26%	28	26%	32	29%	13	12%	109
Stokstraat	8	6%	3	2%	9	7%	39	31%	21	17%	24	19%	22	17%	126
Entre Deux	3	3%	7	6%	15	13%	38	33%	23	20%	22	19%	7	6%	115
Mosea Forum	2	2%	7	6%	3	2%	37	30%	29	23%	29	23%	17	14%	124
Maastricht Total	**14**	**3%**	**21**	**4%**	**30**	**6%**	**142**	**30%**	**101**	**21%**	**107**	**23%**	**59**	**12%**	**474**
Hinthamerstraat	1	1%	3	3%	9	8%	38	35%	24	22%	26	24%	8	7%	109
Kerkstraat	1	1%	1	1%	4	4%	44	42%	20	19%	25	24%	10	10%	105
Arena	3	3%	3	3%	10	9%	51	44%	19	17%	21	18%	8	7%	115
Burgemeester Loeffplein	3	3%	2	2%	16	14%	52	45%	21	18%	16	14%	5	4%	115
s-Hertogenbosch Total	**8**	**2%**	**9**	**2%**	**39**	**9%**	**185**	**42%**	**84**	**19%**	**88**	**20%**	**31**	**7%**	**444**
Total	**22**	**2%**	**30**	**3%**	**69**	**8%**	**327**	**36%**	**185**	**20%**	**195**	**21%**	**90**	**10%**	**918**

APPENDICES - Environmental influences on consumer behaviour

13	Indoor/outdoor														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	4	4%	3	3%	3	3%	28	26%	18	17%	32	29%	21	19%	109
Stokstraat	3	2%	4	3%	1	1%	24	19%	14	11%	32	25%	48	38%	126
Entre Deux	3	3%	1	1%	7	6%	41	36%	30	26%	17	15%	16	14%	115
Mosea Forum	1	1%	4	3%	6	5%	29	23%	22	18%	41	33%	21	17%	124
Maastricht Total	**11**	**2%**	**12**	**3%**	**17**	**4%**	**122**	**26%**	**84**	**18%**	**122**	**26%**	**106**	**22%**	**474**
Hinthamerstraat	1	1%	2	2%	8	7%	28	26%	26	24%	31	28%	13	12%	109
Kerkstraat	2	2%	3	3%	7	7%	29	28%	20	19%	31	30%	13	12%	105
Arena	0	0%	2	2%	6	5%	34	30%	27	23%	27	23%	19	17%	115
Burgemeester Loeffplein	3	3%	4	3%	10	9%	43	37%	22	19%	26	23%	7	6%	115
s-Hertogenbosch Total	**6**	**1%**	**11**	**2%**	**31**	**7%**	**134**	**30%**	**95**	**21%**	**115**	**26%**	**52**	**12%**	**444**
Total	**17**	**2%**	**23**	**3%**	**48**	**5%**	**256**	**28%**	**179**	**19%**	**237**	**26%**	**158**	**17%**	**918**

14	Greenery														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	5	5%	10	9%	12	11%	22	20%	27	25%	24	22%	9	8%	109
Stokstraat	7	6%	12	10%	15	12%	39	31%	23	18%	17	13%	13	10%	126
Entre Deux	22	19%	16	14%	24	21%	29	25%	15	13%	6	5%	3	3%	115
Mosea Forum	28	23%	24	19%	28	23%	30	24%	5	4%	4	3%	5	4%	124
Maastricht Total	**62**	**13%**	**62**	**13%**	**79**	**17%**	**120**	**25%**	**70**	**15%**	**51**	**11%**	**30**	**6%**	**474**
Hinthamerstraat	18	17%	27	25%	26	24%	18	17%	11	10%	7	6%	2	2%	109
Kerkstraat	12	11%	17	16%	15	14%	33	31%	17	16%	8	8%	3	3%	105
Arena	14	12%	23	20%	21	18%	24	21%	19	17%	9	8%	5	4%	115
Burgemeester Loeffplein	17	15%	17	15%	31	27%	22	19%	14	12%	12	10%	2	2%	115
s-Hertogenbosch Total	**61**	**14%**	**84**	**19%**	**93**	**21%**	**97**	**22%**	**61**	**14%**	**36**	**8%**	**12**	**3%**	**444**
Total	**123**	**13%**	**146**	**16%**	**172**	**19%**	**217**	**24%**	**131**	**14%**	**87**	**9%**	**42**	**5%**	**918**

15	Furniture														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	4	4%	15	14%	24	22%	29	27%	12	11%	20	18%	5	5%	109
Stokstraat	10	8%	14	11%	21	17%	49	39%	9	7%	15	12%	8	6%	126
Entre Deux	18	16%	20	17%	24	21%	33	29%	13	11%	5	4%	2	2%	115
Mosea Forum	18	15%	14	11%	25	20%	42	34%	13	10%	5	4%	7	6%	124
Maastricht Total	**50**	**11%**	**63**	**13%**	**94**	**20%**	**153**	**32%**	**47**	**10%**	**45**	**9%**	**22**	**5%**	**474**
Hinthamerstraat	12	11%	22	20%	32	29%	19	17%	13	12%	9	8%	2	2%	109
Kerkstraat	6	6%	11	10%	15	14%	37	35%	23	22%	9	9%	4	4%	105
Arena	4	3%	6	5%	14	12%	28	24%	29	25%	25	22%	9	8%	115
Burgemeester Loeffplein	12	10%	17	15%	30	26%	24	21%	24	21%	5	4%	3	3%	115
s-Hertogenbosch Total	**34**	**8%**	**56**	**13%**	**91**	**20%**	**108**	**24%**	**89**	**20%**	**48**	**11%**	**18**	**4%**	**444**
Total	**84**	**9%**	**119**	**13%**	**185**	**20%**	**261**	**28%**	**136**	**15%**	**93**	**10%**	**40**	**4%**	**918**

16	Shop windows															Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	2	2%	4	4%	22	20%	28	26%	45	41%	8	7%	109
Stokstraat	0	0%	2	2%	5	4%	16	13%	21	17%	42	33%	40	32%	126
Entre Deux	1	1%	1	1%	8	7%	16	14%	48	42%	29	25%	12	10%	115
Mosea Forum	1	1%	1	1%	3	2%	14	11%	43	35%	44	35%	18	15%	124
Maastricht Total	**2**	**0%**	**6**	**1%**	**20**	**4%**	**68**	**14%**	**140**	**30%**	**160**	**34%**	**78**	**16%**	**474**
Hinthamerstraat	4	4%	3	3%	14	13%	23	21%	37	34%	21	19%	7	6%	109
Kerkstraat	0	0%	1	1%	4	4%	23	22%	31	30%	33	31%	13	12%	105
Arena	2	2%	1	1%	11	10%	26	23%	32	28%	33	29%	10	9%	115
Burgemeester Loeffplein	1	1%	2	2%	9	8%	30	26%	39	34%	27	23%	7	6%	115
s-Hertogenbosch Total	**7**	**0%**	**7**	**1%**	**38**	**5%**	**102**	**15%**	**139**	**32%**	**114**	**36%**	**37**	**18%**	**444**
Total	**9**	**1%**	**13**	**1%**	**58**	**6%**	**170**	**19%**	**279**	**30%**	**274**	**30%**	**115**	**13%**	**918**

17	Advertisement															Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	6	6%	6	6%	38	35%	25	23%	28	26%	6	6%	109
Stokstraat	1	1%	3	2%	7	6%	41	33%	24	19%	26	21%	24	19%	126
Entre Deux	3	3%	7	6%	10	9%	41	36%	30	26%	19	17%	5	4%	115
Mosea Forum	2	2%	4	3%	4	3%	41	33%	38	31%	25	20%	10	8%	124
Maastricht Total	**6**	**1%**	**20**	**4%**	**27**	**6%**	**161**	**34%**	**117**	**25%**	**98**	**21%**	**45**	**9%**	**474**
Hinthamerstraat	4	4%	5	5%	14	13%	39	36%	28	26%	12	11%	7	6%	109
Kerkstraat	1	1%	4	4%	4	4%	36	34%	33	31%	17	16%	10	10%	105
Arena	4	3%	8	7%	11	10%	33	29%	28	24%	22	19%	9	8%	115
Burgemeester Loeffplein	0	0%	5	4%	14	12%	51	44%	31	27%	11	10%	3	3%	115
s-Hertogenbosch Total	**9**	**2%**	**22**	**5%**	**43**	**10%**	**159**	**36%**	**120**	**27%**	**62**	**14%**	**29**	**7%**	**444**
Total	**15**	**2%**	**42**	**5%**	**70**	**8%**	**320**	**35%**	**237**	**26%**	**160**	**17%**	**74**	**8%**	**918**

18	Tidiness															Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	3	3%	5	5%	14	13%	31	28%	40	37%	16	15%	109
Stokstraat	1	1%	3	2%	1	1%	11	9%	19	15%	48	38%	43	34%	126
Entre Deux	0	0%	0	0%	4	3%	11	10%	32	28%	52	45%	16	14%	115
Mosea Forum	0	0%	2	2%	1	1%	21	17%	29	23%	48	39%	23	19%	124
Maastricht Total	**1**	**0%**	**8**	**2%**	**11**	**2%**	**57**	**12%**	**111**	**23%**	**188**	**40%**	**98**	**21%**	**474**
Hinthamerstraat	0	0%	1	1%	6	6%	22	20%	30	28%	40	37%	10	9%	109
Kerkstraat	0	0%	0	0%	6	6%	12	11%	34	32%	34	32%	19	18%	105
Arena	0	0%	1	1%	5	4%	16	14%	32	28%	43	37%	18	16%	115
Burgemeester Loeffplein	1	1%	6	5%	6	5%	25	22%	36	31%	29	25%	12	10%	115
s-Hertogenbosch Total	**1**	**0%**	**8**	**2%**	**23**	**5%**	**75**	**17%**	**132**	**30%**	**146**	**33%**	**59**	**13%**	**444**
Total	**2**	**0%**	**16**	**2%**	**34**	**4%**	**132**	**14%**	**243**	**26%**	**334**	**36%**	**157**	**17%**	**918**

19	Width street														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	0	0%	1	1%	13	12%	25	23%	50	46%	20	18%	109
Stokstraat	0	0%	2	2%	8	6%	21	17%	21	17%	39	31%	35	28%	126
Entre Deux	0	0%	0	0%	2	2%	9	8%	31	27%	57	50%	16	14%	115
Mosea Forum	0	0%	2	2%	4	3%	18	15%	22	18%	47	38%	31	25%	124
Maastricht Total	**0**	**0%**	**4**	**1%**	**15**	**3%**	**61**	**13%**	**99**	**21%**	**193**	**41%**	**102**	**22%**	**474**
Hinthamerstraat	1	1%	1	1%	2	2%	12	11%	29	27%	43	39%	21	19%	109
Kerkstraat	0	0%	0	0%	0	0%	8	8%	32	30%	41	39%	24	23%	105
Arena	1	1%	1	1%	2	2%	13	11%	28	24%	43	37%	27	23%	115
Burgemeester Loeffplein	0	0%	0	0%	7	6%	12	10%	33	29%	37	32%	26	23%	115
s-Hertogenbosch Total	**2**	**0%**	**2**	**0%**	**11**	**2%**	**45**	**10%**	**122**	**27%**	**164**	**37%**	**98**	**22%**	**444**
Total	2	**0%**	6	**1%**	26	**3%**	106	**12%**	221	**24%**	357	**39%**	200	**22%**	918

20	Height buildings														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	0	0%	1	1%	19	17%	18	17%	49	45%	22	20%	109
Stokstraat	0	0%	2	2%	4	3%	21	17%	15	12%	40	32%	44	35%	126
Entre Deux	0	0%	0	0%	4	3%	18	16%	25	22%	54	47%	14	12%	115
Mosea Forum	2	2%	1	1%	2	2%	26	21%	24	19%	49	40%	20	16%	124
Maastricht Total	**2**	**0%**	**3**	**1%**	**11**	**2%**	**84**	**18%**	**82**	**17%**	**192**	**41%**	**100**	**21%**	**474**
Hinthamerstraat	0	0%	1	1%	2	2%	16	15%	38	35%	36	33%	16	15%	109
Kerkstraat	0	0%	0	0%	4	4%	14	13%	32	30%	38	36%	17	16%	105
Arena	1	1%	1	1%	6	5%	27	23%	29	25%	31	27%	20	17%	115
Burgemeester Loeffplein	0	0%	2	2%	4	3%	29	25%	39	34%	32	28%	9	8%	115
s-Hertogenbosch Total	**1**	**0%**	**4**	**1%**	**16**	**4%**	**86**	**19%**	**138**	**31%**	**137**	**31%**	**62**	**14%**	**444**
Total	3	**0%**	7	**1%**	27	**3%**	170	**19%**	220	**24%**	329	**36%**	162	**18%**	918

21	Width-height ratio														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	1	1%	3	3%	15	14%	24	22%	48	44%	18	17%	109
Stokstraat	2	2%	1	1%	4	3%	22	17%	16	13%	39	31%	42	33%	126
Entre Deux	0	0%	0	0%	0	0%	19	17%	35	30%	44	38%	17	15%	115
Mosea Forum	2	2%	2	2%	7	6%	28	23%	24	19%	38	31%	23	19%	124
Maastricht Total	**4**	**1%**	**4**	**1%**	**14**	**3%**	**84**	**18%**	**99**	**21%**	**169**	**36%**	**100**	**21%**	**474**
Hinthamerstraat	0	0%	1	1%	6	6%	17	16%	35	32%	35	32%	15	14%	109
Kerkstraat	0	0%	1	1%	3	3%	18	17%	27	26%	41	39%	15	14%	105
Arena	1	1%	1	1%	9	8%	27	23%	29	25%	28	24%	20	17%	115
Burgemeester Loeffplein	0	0%	1	1%	5	4%	24	21%	40	35%	33	29%	12	10%	115
s-Hertogenbosch Total	**1**	**0%**	**4**	**1%**	**23**	**5%**	**86**	**19%**	**131**	**30%**	**137**	**31%**	**62**	**14%**	**444**
Total	5	**1%**	8	**1%**	37	**4%**	170	**19%**	230	**25%**	306	**33%**	162	**18%**	918

22	Crowdedness														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	1	1%	6	6%	19	17%	25	23%	46	42%	12	11%	109
Stokstraat	0	0%	2	2%	2	2%	23	18%	26	21%	37	29%	36	29%	126
Entre Deux	1	1%	3	3%	3	3%	30	26%	31	27%	36	31%	11	10%	115
Mosea Forum	1	1%	3	2%	4	3%	27	22%	34	27%	38	31%	17	14%	124
Maastricht Total	**2**	**0%**	**9**	**2%**	**15**	**3%**	**99**	**21%**	**116**	**24%**	**157**	**33%**	**76**	**16%**	**474**
Hinthamerstraat	0	0%	5	5%	3	3%	25	23%	32	29%	39	36%	5	5%	109
Kerkstraat	0	0%	2	2%	2	2%	22	21%	29	28%	40	38%	10	10%	105
Arena	0	0%	3	3%	5	4%	26	23%	31	27%	36	31%	14	12%	115
Burgemeester Loeffplein	0	0%	0	0%	7	6%	33	29%	38	33%	27	23%	10	9%	115
s-Hertogenbosch Total	**0**	**0%**	**10**	**2%**	**17**	**4%**	**106**	**24%**	**130**	**29%**	**142**	**32%**	**39**	**9%**	**444**
Total	**2**	**0%**	**19**	**2%**	**32**	**3%**	**205**	**22%**	**246**	**27%**	**299**	**33%**	**115**	**13%**	**918**

23	Other visitors														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	1	1%	0	0%	3	3%	32	29%	28	26%	38	35%	7	6%	109
Stokstraat	3	2%	1	1%	3	2%	36	29%	26	21%	32	25%	25	20%	126
Entre Deux	1	1%	1	1%	1	1%	37	32%	29	25%	35	30%	11	10%	115
Mosea Forum	1	1%	2	2%	5	4%	40	32%	32	26%	28	23%	16	13%	124
Maastricht Total	**6**	**1%**	**4**	**1%**	**12**	**3%**	**145**	**31%**	**115**	**24%**	**133**	**28%**	**59**	**12%**	**474**
Hinthamerstraat	2	2%	4	4%	5	5%	28	26%	29	27%	33	30%	8	7%	109
Kerkstraat	0	0%	1	1%	1	1%	29	28%	31	30%	31	30%	12	11%	105
Arena	2	2%	3	3%	7	6%	36	31%	23	20%	32	28%	12	10%	115
Burgemeester Loeffplein	0	0%	3	3%	12	10%	36	31%	28	24%	28	24%	8	7%	115
s-Hertogenbosch Total	**4**	**1%**	**11**	**2%**	**25**	**6%**	**129**	**29%**	**111**	**25%**	**124**	**28%**	**40**	**9%**	**444**
Total	**10**	**1%**	**15**	**2%**	**37**	**4%**	**274**	**30%**	**226**	**25%**	**257**	**28%**	**99**	**11%**	**918**

24	Color of light														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Stokstraat	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Entre Deux	3	3%	2	2%	5	5%	23	25%	23	25%	27	29%	10	11%	93
Mosea Forum	0	0%	0	0%	4	4%	31	32%	23	24%	26	27%	13	13%	97
Maastricht Total	**3**	**2%**	**2**	**1%**	**9**	**5%**	**54**	**28%**	**46**	**24%**	**53**	**28%**	**23**	**12%**	**190**
Hinthamerstraat	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Kerkstraat	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Arena	2	0%	3	3%	7	6%	18	16%	27	25%	33	30%	20	18%	110
Burgemeester Loeffplein	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
s-Hertogenbosch Total	**2**	**2%**	**3**	**3%**	**7**	**6%**	**18**	**16%**	**27**	**25%**	**33**	**30%**	**20**	**18%**	**110**
Total	**5**	**2%**	**5**	**2%**	**16**	**5%**	**72**	**24%**	**73**	**24%**	**86**	**29%**	**43**	**14%**	**300**

25	Elevations														Total
	Very negative		Negative		Fairly negative		Neutral		Fairly positive		Positive		Very positive		
Maastrichter Brugstraat	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Stokstraat	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Entre Deux	3	3%	1	1%	5	5%	23	25%	21	23%	29	31%	11	12%	93
Mosea Forum	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Maastricht Total	**3**	**3%**	**1**	**1%**	**5**	**5%**	**23**	**25%**	**21**	**23%**	**29**	**31%**	**11**	**12%**	**93**
Hinthamerstraat	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Kerkstraat	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Arena	2	2%	5	5%	3	3%	20	18%	25	23%	37	34%	18	16%	110
Burgemeester Loeffplein	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
s-Hertogenbosch Total	**2**	**2%**	**5**	**5%**	**3**	**3%**	**20**	**18%**	**25**	**23%**	**37**	**34%**	**18**	**16%**	**110**
Total	**5**	**2%**	**6**	**3%**	**8**	**4%**	**43**	**21%**	**46**	**23%**	**66**	**33%**	**29**	**14%**	**203**

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.874
Bartlett's Test of Sphericity	Approx. Chi-Square	6220.300
	df	171
	Sig.	.000

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.306	33.189	33.189	5.790	30.475	30.475	2.940	15.474	15.474
2	1.601	8.425	41.614	1.122	5.905	36.380	2.703	14.228	29.703
3	1.358	7.148	48.762	.956	5.030	41.410	2.224	11.708	41.410
4	1.331	7.006	55.768						
5	1.076	5.663	61.431						
6	.992	5.220	66.651						
7	.827	4.354	71.005						
8	.814	4.286	75.291						
9	.646	3.399	78.691						
10	.599	3.154	81.845						
11	.534	2.813	84.658						
12	.528	2.777	87.435						
13	.470	2.476	89.911						
14	.415	2.185	92.096						
15	.380	2.002	94.098						
16	.368	1.936	96.034						
17	.356	1.875	97.910						
18	.217	1.140	99.050						
19	.181	.950	100.000						

Extraction Method: Principal Axis Factoring.

Rotated Factor Matrix[a]

	Factor		
	1	2	3
Accessibility			
Shops			
Restaurants/leisure			
Shape facades		.816	
Material facades		.861	
Material pavement			
Color facades		.604	
Amount of light			
Background noise			
Music			
Indoor/outdoor			
Greenery			.680
Furniture			.724
Shop windows			
Advertisement			
Width street	.708		
Height buildings	.744		
Width-height ratio	.805		
Crowdedness	.578		

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Factor Transformation Matrix

Factor	1	2	3
1	.627	.600	.496
2	-.704	.166	.690
3	.332	-.782	.527

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser
Normalization.

APPENDIX I. DUMMY VARIABLES

Physical characteristcs	Abbreviations		dummies	meaning	(		)	=		;		(		)	=	
Crowdedness	Crowded	→	Crowd1	quiet	(	1	)	=	1	;	average	(	2	)	=	0
		→	Crowd2	crowded	(	3	)	=	1	;	average	(	2	)	=	0
Weather	Weather	→	Weather 1	sunny	(	4	)	=	1	;	partly cloudy	(	3	)	=	0
		→	Weather 2	cloudy	(	2	)	=	1	;	partly cloudy	(	3	)	=	0
Distance parking	Acc1	→	Acc1	≤150				=	1	;	>150				=	0
Distance public transport stop	Acc2	→	Acc2	≤150				=	1	;	>150				=	0
Fashion and luxury shops	Sh1	→	Sh1	>15				=	1	;	≤15				=	0
Daily shopping	Sh2	→	Sh2	>1				=	1	;	≤1				=	0
Other shops	Sh3	→	Sh3	>4				=	1	;	≤4				=	0
Restaurants/leisure	Rest	→	Rest	>6				=	1	;	≤6				=	0
Shape of facades	Shfac	→	Shfac	Historical	(	1	)	=	1	;	Clean and Uniform	(	2	)	=	0
Material of facades	MATfac	→	MATfac	Historical	(	1	)	=	1	;	Contemporary	(	2	)	=	0
Material of pavements	MATpav	→	MATpav	Rough	(	1	)	=	1	;	smooth	(	2	)	=	0
Color of facades	COLfac	→	COLfacD	Bright	(	3	)	=	1	;	mixed	(	2	)	=	0
		→	COLfacB	Dark	(	1	)	=	1	;	mixed	(	2	)	=	0
Amount of light	Light	→	LightH	High	(	3	)	=	1	;	average	(	2	)	=	0
		→	LightL	Low	(	1	)	=	1	;	average	(	2	)	=	0
Background Noise	Bgnoise	→	BgnoiseH	High	(	3	)	=	1	;	average	(	2	)	=	0
		→	BgnoiseL	Low	(	1	)	=	1	;	average	(	2	)	=	0
Music	Music	→	Music	yes	(	2	)	=	1	;	no	(	1	)	=	0
Smell	Smell	→	Smell	good	(	2	)	=	1	;	bad	(	-	)	=	0
Indoor	Indoor	→	Indoor	Indoor	(	2	)	=	1	;	outdoor	(	1	)	=	0
Greenery (amount)	Greenery	→	Greenery	yes				=	1	;	no				=	0
Furniture	Furn	→	Furn	yes				=	1	;	no				=	0
Shop windows	Shwind	→	Shwind1	discrete	(	1	)	=	1	;	neutral	(	2	)	=	0
		→	Shwind2	striking	(	3	)	=	1	;	neutral	(	2	)	=	0
Advertisement Signs	Adsigns	→	Adsigns1	discrete	(	1	)	=	1	;	neutral	(	2	)	=	0
			Adsigns2	striking	(	3	)	=	1	;	neutral	(	2	)	=	0
Width of the street	WIDTHs	→	WIDTHs	>6,5				=	1	;	≤6,5				=	0
Height of the buildings	HEIGHTb	→	HEIGHTb	High (level 4,5)				=	1	;	Average (level 2,3)				=	0
Width to height ratio	Whratio	→	Whratio	>4,5				=	1	;	≤4,5				=	0
Color of the light	COLlight		COLltC	cool	(	1	)	=	1	;	average	(	2	)	=	0
		→	COLltW	warm	(	3	)	=	1	;	average	(	2	)	=	0

*based on results Tree analysis

APPENDIX J. CORRELATION MATRIX

Correlations

Variable	Correlations (value)
Crowd1	x
Crowd2	x
Weather1	x
Weather2	x
Acc1	x
Acc2	Weather2 (0,50); Acc1 (0,79)
Sh1	x
Sh2	x
Sh3	Weather1 (0,59); Acc2 (0,56)
Rest	Weather1 (0,59); Weather2 (0,57)
SHfac	Sh2 (0,78); Rest (0,56)
MATfac	Sh2 (0,78); Rest (0,56); SHfac (1,00)
MATpav	Crowd1 (0,57); SHfac (0,60); MATfac (0,60)
COLfacD	Crowd1 (0,57)
COLfacB	Weather2 (0,60); Acc1 (0,73); Acc2 (0,57)
LightH	SHfac (0,76); MATfac (0,76)
LightL	Sh1 (0,67); COLfacD (0,65); COLfacB (0,65)
BgnoiseH	Acc1 (0,75); Acc2 (0,59); LightL (0,64)
BgnoiseL	MATpav (0,68)
Music	Sh1 (0,58); SHfac (0,75); MATfac (0,75); MATpav (0,75); COLfacB (0,57)
Indoor	LightL (0,65)
Greenery	MATpav (0,75); BgnoiseL (0,51)
Furn	x
ShwindD	MATpav (0,68); BgnoiseL (1,00); Indoor (0,51)
ShwindS	Acc1 (1,00); Acc2 (0,79); COLfacD (0,73); BgnoiseL (0,75)
AdsignsD	x
AdsignsS	Sh2 (0,65); Sh3 (0,67)
WIDTHs	Sh2 (0,67)
HEIGHTb	Crowd1 (0,76); MATpav (0,76)
Whratio	Weather2 (0,79); Acc2 (0,76); Sh3 (0,74); HEIGHTb (0,76)
COLitC	COLfacB (0,66); Greenery (0,86); WIDTHs (0,50)
COLitW	COLfacB (0,84); Greenery (0,85)