Extended shop opening hours in medium-sized city centres
Gaining insight in consumer shopping preferences and behaviour

Author
S.M.G. (Stefanie) van den Heuvel

Graduation program
Construction, Management and Engineering
Eindhoven University of Technology

Graduation committee
Prof. dr. ir. W.F. (Wim) Schaefer   Main supervisor department of CME TU/e
Ir. A.W.J. (Aloys) Borgers   Graduation supervisor TU/e
Dr. ing. P.J.H.J. (Peter) van der Waerden   Graduation supervisor TU/e
Drs. J.P. (Jeroen) Verwaaijen   Graduation supervisor Strabo bv

Date of final presentation
26th of June 2014

Table of contents

Preface

Let me directly introduce myself. My name is Stefanie and besides the fact that I am studying in the faculty of Architecture and Building Sciences for almost seven years, I have one addiction: called shopping. I am glad I got the opportunity to integrate this shopping-hobby with an academic research. There would not have been a research subject fitting me more than this, I am definitely sure about that.

This research symbolizes my graduation project for the master Construction Management and Engineering from Eindhoven University of Technology.

Without my supervisors from the TU/e this project would not have been possible. A special word of thanks to Aloys, Peter, Jeroen and Wim for supervising, stimulating and surprising me. I think I was an opinionated, high-demanding student continuously considering thousands of options. And you tried to stop me, even when I was unstoppable. Never before professors replied to me on boxing day; on Saturday mornings before korfball matches; on a general Thursday morning before sunrise, always with some critical notes. I would like to mention that I really enjoyed the inspiring and sociable meetings. I am afraid I am going to miss them.

Stefanie van den Heuvel
Eindhoven, June 2014

Executive summary

Growing population, increasing prosperity, aspirations of market- and governmental parties; this are all factors that contributed to the growth of demand for and supply of retail space the last decades. But times are changing. While most retail areas in the Netherlands have been unchanged the last twenty years, the current retail market is structurally changing from supply-oriented towards demand-driven. Though the existing retail structure has a good base, at this moment the Dutch retail market is saturated. In contrast to vacancy in the office market, which has been on the agenda for years, vacancy of retail properties is a relatively new problem and the demand for extra retail space will not increase the coming years as it did during the last decades. In contrast, proposed is that the retail surface in urban areas will decline with about 7% until 2020. The main reason for this development is the web shop-march, especially clothes will be bought more often online. The service economy is no longer bounded from nine to five while opening hours of physical shops still are. For retailers, it is important to deliver value and satisfy people-based needs to gain a stronger position. Therefore, the total entourage needs to get attention in order to amuse and inspire the contemporary consumers. It is important to take into account the new consumer society because of their continuously changing behaviour and their contribution to and influence on the vitality of the shopping landscape in inner cities.

An extension of opening hours seems an interesting first step in making the inner city retail areas more attractive and strengthen the competitiveness towards internet shopping. In order to empirically provide insight in consequences for shopping and leisure behaviour when opening hours of shops are extended, the main research question is:

'How do extended opening hours of different types of retail facilities in medium-sized city central shopping areas influence consumer behaviour, and what role do parking tariffs play in this context?'

The focus of the study will be on the Brabantstad cities Breda, Eindhoven, Helmond, 's-Hertogenbosch and Tilburg. A questionnaire is conducted consisting of three parts. With the first part of the questionnaire, current shopping behaviour is investigated including aspects as visit frequency, visit day and time, time spent, trip origin, mode of transport used, shopping in company or individual, type of products shopped for and shopping for hedonic or utilitarian values.

The second part of the questionnaire consists of a stated choice experiment investigating changes in shopping behaviour by presenting new situations to respondents. Shopping behaviour is expressed by three variables: shopping on a later time of the day, for a longer time period, and with a higher visit frequency. This part is followed by five choice set combinations where consumers are asked for their preferences concerning shop opening hours and parking tariffs where shop opening hours are linked to three types of shops in this research: Fashion-, Beauty- and Leisure shops. Parking tariffs have to be proportional to the retail offer and will affect shopping behaviour. Both the shop type-variables and the parking tariff together are included in alternatives and choice tasks. All variables do consist of three attribute levels within the range of current experience and believability. Concerning shop opening hours, for the three types of shops 6:00 PM and 10:00 PM are chosen as extreme

ranges; 8:00 PM is chosen as intermediate level. Concerning parking tariff, the parking tariff will be normal, which means the prices are the same as for the day-period, 50%- discount, or for free. Besides, other important variables such as adapted opening hours of leisure facilities, accessibility by public transport and shop opening time are kept constant. Twenty-seven alternatives are selected and choice sets were designed. By the fact attribute levels of one alternative may outperform the other alternative's attribute levels some choice set combinations were seen as less realistic and therefore removed from the design. As a sampling strategy, the choice sets are presented randomly to respondents by using an in home developed questionnaire-system.

The questionnaire is ended with administering demographical variables as age, gender and occupation. The cross-sectional online survey is spread out using two different sources, PanelClix, a commercial company, and snowballing resulting in 736 completed questionnaires in total.

By analysing the outcomes, using Binary Logistic Regression- and Multinomial Logit Modelling, the following conclusions can be drawn. Most of the respondents shop between 4 and 12 times last year in the city centre; age and gender are determining factors in visit frequency and increasing visit frequency. By an extension of fashion opening hours younger respondents will visit the city centre more often than older respondents, also females tend to visit the downtown area more often. In general, weekend-days and the shopping night are most popular moments for shopping. Analysis showed that younger respondents are more sensitive to extended opening hours. An ideal situation will be gained when all shops are open till 10:00 PM: 90% of the young respondents prefers this situation above the current situation in which shops are opened till 6:00 PM. Meanwhile, older respondents value parking tariffs higher, they visit the shopping centre mostly by car. An average visit takes between 1 and 2 hours, where females spent significantly more time shopping than males and part-time employees and unemployed longer than fulltime workers, students and pensioners. Females also tend to shop longer as compared to men when shop opening hours are extended.

With the outcomes from the analysis, insight in consequences for stakeholders will be provided and a general advice is given towards the different stakeholders regarding organisational aspects. For example, municipalities have a role in stimulating a multi-stakeholder approach towards the main cities' shopping area, an integral approach may help in making the shopping landscape more attractive in order to tackle the retail vacancy problem.

All in all, an extension of opening hours in evenings and a lowering of parking tariffs is an interesting first step in improving the inner city retail areas' attractiveness and strengthen the competitiveness towards internet shopping and subsequently retail vacancy, although it will not solve the entire retail vacancy problem where the Netherlands is confronted with currently. However, with an opening hour extension (combined with a reduction of parking tariffs) as a first measure, the remaining retail surface may become more viable and profitable.

1. INTRODUCTION

While most retail areas in the Netherlands have been unchanged the last twenty years, the current retail market is structurally changing from supply-oriented towards demand-driven; consumers are better informed, have different channels for buying the same products and have less time to go shopping or spending free time than twenty years ago. In fact, 40% of the consumers do have less spare time than five years ago (van Cauter - de Jonge, 2013; Molenaar, 2013). While the existing retail structure has a good base, it becomes more difficult to respond to the changing needs of the customer (Expertteam Detailhandel Noord-Brabant, 2013). Molenaar (2011) states that trends such as experience and spending free time become more and more important. The total entourage needs attention in order to amuse the contemporary consumers. A combination between restaurants, shops and other leisure oriented facilities is seen as a profitable mix (Evers, 2011). Compared to other European countries, the Netherlands has one of the most advanced retail property markets with over 30 million square metres of retail surface (Detailhandel Nederland, 2013). At this moment the Dutch retail market is saturated and retail vacancy is a relatively new problem (Engbers, 2012). Therefore consumer preferences are more important than before and should be taken into account in order to broaden the chances of existing retailers and investment companies before the situation will even get worse; structural vacancy leads to neighbourhood degradation and declining quality of life. Shopping in inner city centres is the second most popular recreational activity in the Netherlands and ensures high employment rates in a municipality. However, consumers are flexible regarding which retail area they visit and the kilometres they are willing to travel. Though, the time of visit is limited by the opening hours (Beentjes, 2013). In addition those opening hours compete with working hours. This means that opening hours of physical retail facilities will ask for another way of thinking in order to respond to consumers' demand. Consumers consume on moments in time which are preferable for them. Online retailers anticipate to those needs by being on-line at all times for example; the highest amount of visitors is measured when physical shops are closed (CBW-MITEX, 2010). However, there is still a chance for the physical retail facilities. According to Weltevreden (2007), recreational shopping, in contrast to internet shopping, is seen as a social, leisure activity which is irreplaceable and gains popularity. But is it not strange that those facilities, meant for spending spare time, are opened more or less eighty per cent of the time when 'working class men' are at work? Since July 2013 new national legislation ensures exemption regarding Sunday openings of retail facilities. From now on it is up to municipalities to decide whether shops are allowed to open or not. This implies that apparently there is a need to open shops on Sundays because of the fact that current opening hours do not satisfy customers' needs anymore. This is a major step after the introduction of the Dutch 'Winkeltijdenwet' from 1996 and the 'Winkelsluitingswet' dating from 1976 (Minister van Economische Zaken, 2010; Rijksoverheid, 2013). With the recently introduced regulation, the attention to the current retail landscape, especially regarding opening hours, in the Netherlands is revealed; there is need for a service economy no longer bounded to the nine-to-five norm (Taskforce Deeltijdplus, 2010). But less is known about the consequences of a shift in retail opening hours on consumer shopping and leisure behaviour. Van Cauter – de Jonge (2013) already examined that, especially in the age group between 26 and 45 years, current retail opening hours do not satisfy their needs. An extension of opening hours seems an interesting first step in making the inner city retail

areas more attractive and strengthening the competitiveness towards internet shopping. Although, this aspect did not get much attention in scientific research before. It is not known what consequences an extension of opening hours has regarding consumer shopping-, travel- and leisure behaviour in medium-sized city centres.

1.1 Research question

In order to empirically provide insight into consequences in shopping and leisure behaviour when opening hours of shops are extended, the following main research question is developed. First will be investigated if there is demand for an extension in opening hours. The focus of the research will be on the influence of opening hours and parking tariffs on shopping behaviour. Subsequently, the consequences of changes in shopping behaviour will be outlined for the involved stakeholders, if shopping hours will be liberalized. Subsequent to the research goal, the main research question for this research will be:

'How do extended opening hours of different types of retail facilities in medium-sized city central shopping areas influence consumer behaviour, and what role do parking tariffs play in this context?'

In order to answer the main research question, extended research has to be carried out substantiated by several sub-questions to structure the research-process. The sub-questions for this research are:

1. What is typical shopping behaviour of visitors in inner city areas of medium-sized Dutch cities?
2. What are ideal opening hours and parking tariffs, and how would these opening hours and parking tariffs influence consumer behaviour?

This research will contribute to the KENWIB programme, Kenniscluster Energie-Neutral Wonen en Werken in Brabant, by investigating in what way the results will contribute to the sustainability of the city centre. For this reason, the Brabantstad agglomeration is chosen as a case.

1.2 Research method

For this research stated choice will be applied, containing three important steps. First, variables will be selected out of literature research. With those variables, or attributes, different scenarios can be designed. After this, a questionnaire will be created, consisting partly of the scenarios where respondents are repeatedly asked to choose between two scenarios. Respondents will also answer extra questions to gain insight in their future behaviour. Discrete choice modelling and logistic regression will be used to analyse the data, in order to gain insight into and predict consumer choices in different scenarios.

1.3 Layout of the report

First, a literature review is conducted on the Dutch retail landscape, shopping behaviour, and opening hours of retail facilities (chapter two). After that, in chapter three the research design is explained by means of five key steps. Then, the analysis and results are succinctly discussed including information about the research sample and, shopping behaviour in different scenarios. The whole research will be finished with a concluding-part (chapter five) containing a general conclusion, a stakeholder advice, discussions and recommendations.

2. LITERATURE REVIEW

In this part, a literature review is presented on developments in the retail landscape: From history, until today and may be tomorrow. Both the supply- and demand side are highlighted. First, the evolution of the Dutch retail landscape is discussed (supply-side), then insights in shopping behaviour (demand-side) are mapped. Subsequently, attention is paid to opening hours as a means to reintegrate the supply- and the demand-side.

2.1. The Dutch retail landscape

Growing population, increasing prosperity, aspirations of market- and governmental parties; this are all factors that contributed to the growth of demand for and supply of retail space the last decades. But times are changing. This part of the literature review will give some insights into the development of the Dutch retail landscape.

2.1.1 Short history[1]

The Dutch retail pattern gained its current form shortly before the twentieth century. Prosperity from the industrial revolution led to the international development of store types with the aperture of the first Dutch Department store, as an successor of the shopping arcade in 1912; the first retail-revolution in reinforcing the city centre whereby shopping became an isolated experience where especially women spent their time to discover, amaze and amuse. Through the connection of shopping areas with public transport the service area of stores increased enormously. Besides the developments in store types and infrastructure, also driving forces such as economical regulations and spatial planning changed. The number of actors increased and major players tried to dominate the market (Evers et al., 2005).

After the Second World War the central place theory of Christaller has been the leading principle in developing and planning new shops and retail areas by government. With the theory supply and demand side of retail are fitted; a linear relationship between retail metres and number of inhabitants led to a functional fine-woven hierarchical pattern of shopping centres in the urban area, resulting in mono-functional shopping areas on city-, district- and neighbourhood level (Janssen, 2011).

Increased car ownership and new infrastructural developments resulted into retail area competition over larger distances in the advantage of compact inner city centres with their enormous offer and attractiveness. Due to the fact consumers travel by themselves to retailers instead of the other way around, mass marketing is born and since the fifties both retail areas and stores started growing. In history this can be marked as the second retail revolution in the Netherlands. Another development influenced by car ownership is the possibility of stores to locate in peripheral areas, a very effective strategy and highly adopted in European countries. However, the government implemented new legislation to safeguard the inner city from retail developments in peripheral locations. By the end of the

---

[1] An extended overview of historical developments in the Dutch retail landscape is given in appendix 1.

20th century the policy is more liberalized, including more deregulation and decentralization by policy documents on spatial planning (Janssen, 2011; Evers et al., 2005; Seip & Ashworth, 1998).

The last few decades are characterized by internationalization of businesses, subsidiarization, increasing scale of stores and concentration, resulting in increased uniformity of Dutch retail areas in favour of large and chain stores. In 2011, 96% of the inner city (A1 and A2 locations) retail surface in municipalities with more than 100.000 inhabitants is occupied by subsidiaries. The retail sector is often seen as the most important activity in inner city centres and also has become an important part of the Dutch economy and culture by the expenditures, the high employment rates (10% of the total labour force) and the leisure activities (Gemeente Helmond, 2013; Guy, Dawson, Myers & Alexander, cited in Janssen, 2011; Seip & Asworth, 1998).

The cyclical sensitivity of the retail sector is shown by decreasing sales turnovers and increasing retail vacancy rates. According to Evers et al. (2005) the sector is often used as an indicator of economic health; developments in retail do have deep spatial and societal impact. That cities are consumer dependent especially becomes clear during the last years, by the changes in consumer shopping behaviour followed from the rise of internet as a shopping channel, Omni channel commerce. This is also called the next retail revolution, after the department store and the self-service (Raven & Rindertsma, 2012; Evers et al., 2005).

2.1.2 Retail structure

As already mentioned in the previous paragraph, the Dutch traditional intricate, fine-woven retail landscape has been highly determined by the central places theory of Christaller; where a spatial connection can be seen between the dispersion of shops and the number of inhabitants. However, during the nineties district and neighbourhood centres decreased in favour of inner city centres and peripheral developments. Therefore, there has been a small shift in the different retail structure categories and three main levels of retail agglomerations are distinguished nowadays. In the urban tissue, the level of the city centre and supporting centre (containing district and neighbourhood centres), outside the peripheral retail establishment, so called PDV- and GDV-locations. The three levels of retail agglomerations have different qualities and specialities, have different scopes and are attractive for different shopping motives.

Traffic has been an important aspect in regulating the spatial location of retail areas or stores, especially by governmental policy aiming at reducing mobility. The location of retail, relative to housing, determines the transport mode used by the amount of kilometres one has to travel. In the Netherlands, those distances are mainly small. Especially regarding European countries cycling and walking to shops is relatively popular in the Netherlands (Janssen, 2011; Evers et al., 2005).

Level 1 - The city centre
As Seip and Ashworth (1998) stated, the inner city centre is a place with the physical proximity of buildings, functions, people and activities, whereby accessibility advantages arise. In the Netherlands, the city centre can be seen as main attractor of a city because of the historical or characteristic value (Seip and Ashworth, 1998). However, urban liveliness is

influenced by retail and shopping opportunities. Swarbrooke, cited in Leask (2010), defines a visitor destination as being "a larger area that includes a number of individual attractions together with the support services required by tourists". An attractive environment is created by stores offering a large variety of products (Kosfeld, 2002). Without retail, the city centre would not be interesting for a huge amount of visitors, characterized as being local, domestic and international. Therefore, it is important to ensure the retail vitality (Evers et al., 2005). The attractiveness of the downtown shopping area focussing on the recreational aspect depends especially on the retail offer, primarily determined by fashion shopping (Guy, 1998). The larger the diversity and number of specialty shops, the larger the fun offer (Dijkgraaf & Gradus, 2004). But also other aspects such as accessibility and parking facilities are of importance, good accessibility, enough parking facilities and good parking tariffs are a prerequisite which can lead to an increase in the service area of the city centre. The more attractive the city centre, the more and the longer consumers stay and the more they will spend (HBD, 2011; Evers et al., 2005).

In 2012, the city centre was responsible for 56% of the total retail floor space in retail areas in the Netherlands (Locatus, 2012). Approximately 40% is located in the shopping centres of the 17 largest cities and other main large shopping areas. As a side note it has to be mentioned that the largest cities in the Netherlands are medium-sized seen in European or international context (Seip & Ashworth, 1998). Besides the retail function of an inner city centre also governmental, ideological, cultural and social activities do benefit from good accessibility and a central position in the urban area. A combination between leisure facilities, such as restaurants, and shops strengthens the attraction of a city centre. A trend can be distinguished in which retail and leisure converge although the differences still exist, they are becoming smaller (Janssen, 2011; Evers et al., 2005; Seip & Ashworth, 1998).

The city centre as scenery for entertainment
Since the eighties, the Dutch government pays extra attention to the multifunctional character of inner cities. Besides retail, the city centre functions also as a meeting place, a residential area, an idea-generator, employment place and a leisure place with cultural activities such as museums, theatres, galleries and festivals for example. All those aspects could either strengthen or weaken each other but one thing is for sure, all kind of visitors or users provide a valuable contribution to the city's economy (Seip & Ashworth, 1998). According to Evers et al. (2005) a combination between retail and leisure activities strengthens the areas attractiveness. To have a better interplay between shopping and relaxation, shops and restaurants, pubs, bars should be combined which results in a longer visiting time (HBD, 2011). The mixed-use shopping district, both with shopping as an experience and the combination with restaurants/ leisure, should be approached as one. Especially fun-shopping areas will take advantage of the combination with other leisure activities (I&O Research, 2012; Evers et al., 2005). As Seip and Ashworth (1998) investigated for Groningen, in a recreational day trip a museum-visit is often combined with shopping. Also other activities such as sight-seeing and visiting bars and restaurants are regularly combined. Geiger (2007) investigated night-time shopping behaviour especially for supermarket visits. She mentions other night-time leisure activities in her research such as cinemas, games arcades, pubs and bars, restaurants and fast-food outlets but also internet-shopping or browsing from home.

Level 2 - The supporting centre

Supporting centres are centres located close to residential areas, in districts, quarters and neighbourhoods, focused on convenience shopping. The retail offer mostly consists of shops offering convenience, household and personal goods (Guy, 1998). Proximity has the highest priority concerning everyday shopping, aspects such as accessibility and parking facilities do determine the range of the service area. Besides, the diversity of the retail offer in combination with cafés and bars are important factors for a supporting centre to remain attractive (HBD, 2011; Evers et al., 2005).

Level 3 - The peripheral retail establishment

The retail centres outside the urban area, the PDV and GDV-locations are mainly uniform centres with a limited supply in very specific branches. However, the peripheral areas have potential to grow as a consequence of mobility and accessibility. Those areas are mainly interesting for shops selling goods which have a low purchasing frequency with large choices, for example electronics- or bicycle stores in sensory stimulating experience centres including small-scale catering to extend the period of stay. However, at this moment Dutch policy focusses on the redevelopment of existing locations instead of aiming at new initiatives such as the experience centre (HBD, 2011).

Other developments

Besides the three distinguished levels there are some exceptions such as factory outlet centres or other special types of retail areas, for example Schiphol Shopping Centre which is located in the main airport of the Netherlands (Janssen, 2011). Also abroad can be distinguished some additional types of retail structures. For example the strip mall in the United States or the retail park in Great-Britain which are both agglomerations of mainly large stores with a collective parking facility. Most of the time, they are part of a larger commercial strip. A shopping mall consists of a huge amount of small shops and one or more department stores. Further segments, such as a power centre, a strip mall with only speciality shops, and a Factory Outlet Centre, a shopping mall with mainly factory shops can be distinguished (Evers et al., 2005).

2.1.3 Retail vacancy

While retail areas in the Netherlands have been unchanged the last twenty years, the current retail market is structurally changing from supply-oriented towards demand-driven. The last decades are characterized by wish-full thinking; by creating an environment with enough amenity value, it will lead automatically to enough customers (Molenaar, 2013). In contrast to vacancy in the office market, which has been on the agenda for years, vacancy of retail properties is a relatively new problem (Engbers, 2012). At this moment, the Dutch retail market is saturated which means that municipalities need to rearrange because of the fact the retail vacancy only increased by the last seven years resulting in a percentage of 6.9% of total retail stock in January 2014; 7.3% of total retail surface, which is seen as problematic (Locatus, 2014). Assuming a frictional vacancy rate of 2%, 4.9% is structural due to overproduction and lack of policy. The problem is locally oriented but already scattered throughout the country, especially shrinking regions are affected with the corresponding effects on quality of life. The demand for extra retail space will not increase the coming years as it did during the last decades (Janssen, 2011). In contrast, according to Booz &

Company (2013) the retail surface in urban areas will decline with another two million square meters the coming seven years, and in total 17% of the retail surface will disappear perhaps. The main reason for this development is the web shop-march, especially clothes will be bought more often online. In May 2014, already 8.5% of clothes have been bought on the internet and in 2020 this will become 25% (ABN Amro, 2014). Window-shopping is replaced by internet searching and therefore visiting a shopping centre will be more goal-oriented (Kennisplatform Verkeer en Vervoer, 2013). Other causes of retail vacancy are affected by social and demographical factors such as aging and dejuvenation of the population, the economic crisis and the aspect of 'consuminderen', the tendency to consume less, resulting from decreased scarcity. Those developments are partly a consequence of cyclical influences, however, a large part will have a structural character and determine the future retail structure. Nevertheless, there are still plans to develop even more retail surface (Kennisplatform Verkeer en Vervoer, 2013; Kamer van Koophandel, 2012; Zandbergen, 2012; I&O Research, 2011; VNG, 2011).

According to Expertteam Detailhandel Noord-Brabant (2013), an integral view on retail structure helps in making choices by both market- and governmental parties. Strengthening the existing retail structure, by replacing and improving the quality, the retailer resilience and the diversity of local supply, should be the main policy, instead of developing new shops and retail areas. Retail vacancy has a bad influence on the quality of life resulting in decreased community ties and cohesion. With declining social safety and neighbourhood liveability influencing urban sustainability (Barata-Salgueiro & Erkip, 2014; Kamer van Koophandel, 2012; Pen, 2012; I&O Research, 2011; VNG, 2011). According to Barata-Salgueiro and Erkip (2014) "urban sustainability has been associated with preserving balanced retail systems set in diverse facilities and shopping environments that are able to respond efficiently to the needs, wants and desires of different kinds of consumers". Therefore, the consumer, although it is not a decision-maker, is an important actor to take into account because of his/her continuously changing behaviour and requirements concerning the shopping landscape (Kennisplatform Verkeer en Vervoer, 2013; Janssen, 2011). Already in 1998, Harnett (in Diep & Sweeney, 2008) cited "when retailers satisfy people-based needs, they are delivering value, which puts them in a much stronger position in the long term."

2.2 Shopping behaviour

Shopping in inner city centres is the second most popular recreational activity in the Netherlands and ensures high employment rates in municipalities (NBTC-NIPO, 2011). As already mentioned, the increasing consumer society affects the current retail structure. Therefore, the consumer, which is according to Babin, Darden and Griffin (1994) both intellectual and emotional, has to be taken into account because of its contribution to the liveability of inner cities, its continuously changing behaviour and its requirements for, and influence on the shopping landscape.

2.2.1 Why do people shop?

This question was already asked in 1972 by Tauber who found out that shopping behaviour will not only be explained by the obvious purchasing of products and services, but also by the enjoyment of spending time on shopping for personal or social motives. Later on, Bellenger and Korgaonkar (1980) defined "those who enjoy shopping as a leisure time

activity" as recreational shoppers and made the same distinction between recreational and convenience or economic shoppers. It is a logical consequence that recreational shoppers on average spend more time per shopping trip, tend to shop more often in company and get different benefits from shopping than the convenience or economic shopper who approaches shopping from a time- or money-saving point of view and tries to minimize the time and effort expenditures in accomplishing its goal. Also Hallsworth (in Seip and Ashworth, 1998) stated "shopping has a social function, allowing people to meet others whilst on shopping trips away from the home." And according to HBD (2011) shopping is often seen as a social activity which is more pleasant with others than on their own. From the statements above it becomes clear that different consumers have different incentives to visit the city centre influencing their shopping behaviour.

Babin, Darden and Griffin (1994) also stated that a shopping trip is valuable either through "successfully accomplishing its intended goal or by providing enjoyment", enhancing different shopping values which influence future consumer decisions; hedonic and utilitarian values. Hedonic value is more subjective and personal and will be gained by having fun during a shopping trip (entertainment and emotional worth), utilitarian shopping behaviour is more rational and task-orientated and value will be gained by reaching the shopping goal. According to Diep and Sweeney (2008) the purpose of the trip may affect the value gained out of a shopping trip. According to Janssen (2011) "Hedonic values reflect personal gratification and self-expression found in the shopping experience itself."

Depending on shopping motive, retail quality and location are important. Proximity is of high priority with utilitarian shopping. However, for hedonic oriented consumers, it is more important to spend time with family and friends, relax and entertain than purchase products. With this type of shopping motive completeness of the retail offer, especially the presence of clothing- and department stores, is of high importance and therefore particularly central shopping areas (with 70% of stores focussing on the fun-aspect) may remain attractive. Accessibility is less important which becomes clear from the fact that target groups or customers also come from outside municipality borders. The shopping environment is more important concerning hedonic shopping trip value. Fun-shopping is more often combined with other leisure activities such as visiting restaurants and bars resulting in a longer shopping-duration. This mainly social motive, ensuring recreational and psychological indulgence can thus be distinguished from the economic motive as pointed out above. Although, Geiger (2007) investigated night-time grocery shopping behaviour and found out that besides the prevalence of functional motivators, hedonic and social/psychological aspects may not be ignored. In social psychology hedonic and utilitarian motivation is long labelled as cognitive and affective attitudes (Raven and Rindertsma, 2012; I&O Research, 2012; Janssen, 2011; Hsiao, 2009; Evers et al., 2005; Seip & Ashworth, 1998; Batra & Athola, 1990).

What becomes clear from the categories above is that shopping trips are made for the goal of goods acquisition in a purposeful and efficient process, and purposes such as social interaction, enjoyment, pleasure and entertainment. Economic shoppers are attracted by a convenient retail outlet location for purchasing goods, instead of the recreational shopper who wants experience and an attractive atmosphere (Hirschman & Holbrook, in Kemperman, Borgers & Timmerans, 2009; Geiger, 2007; Bellenger & Korgaonkar, 1980).

According to Solomon and Belk, in Bäckström (2011) "consumers use personal possessions such as clothing, automobiles, and jewellery as a help in defining their sense of self".

However, Bäckström (2011) investigated shopping from a sociocultural approach, as a leisure activity. She found out that leisure shopping can both include hedonic and utilitarian motives during one shopping trip; various shopping orientations may not simply be translated into distinct shopper types. It is also possible that consumers "experience and pursue leisure shopping in different ways on different occasions" and on one occasion, consumers may have a different meaning about leisure shopping. In contrast to other studies which state that leisure shopping is more a social activity, whereby stimulation of senses and pleasurable experiences are more important than the acquisition of products, this study shows that purchasing goods induces pleasure in shopping and besides it is shown that many consumers prefer to shop on their own and enjoy this activity individually.

Bäckström (2011) distinguishes three themes in which leisure shopping may be practised. The first one is shopping as hunting, an ambition to search and find objects of desire. It is clear that this way of leisure shopping diverges from the predominant view of being opposed to economic shopping. Second, shopping as scouting is distinguished "just being at the marketplace, experience stores, products and people, individually or together with a companion." Shopping as socializing is the last theme, about amusing shopping by the social interaction with family and friends.

2.2.2 Determinants of shopping behaviour

By extending Reilly's gravity model from 1931, in 1964, Huff was the first one investigating shopping centre choice. He examined the influence of distance to and size of shopping malls. Largely investigated by several researchers different aspects have been distinguished and have proven to be influential concerning which shopping area consumers will visit.

In 1990, Finn and Louviere investigated differences in shopping centre choice for several shopping segment consideration sets related to social, economic and demographic differences in shoppers. Consideration sets consisted of shopping centres or retail alternatives consumers were familiar with and evaluated as positive. In their research distance is proven to be an important variable besides good service and a wide selection consisting of the latest fashion and low prices. Also accessibility, parking facilities, social safety, crowds level, compactness of city centre and the leisure and entertainment offer have impact on the evaluation of a shopping trip (Seip & Ashworth, 1998). As Arentze and Timmermans already in 2001 stated "when applied to shopping location choice, travel distance, selection of stores, shopping centre characteristics and parking facilities are among the attributes that have proven to be most important for explaining and predicting consumer behaviour."

Severin, Louviere and Finn (2001) found out that a convenient location is most important concerning shopping centre choice. Other aspects such as "good quality, wide selection, good service, nice atmosphere and good sales/bargains" have also proven to be significant. Also safety, size of shops and shopping area, comfort, atmosphere, shop attractiveness, accessibility and parking tariffs are important for consumers when it comes to a recreational shopping day (Evers, Kooijman & van der Krabben, cited in Beentjes, 2013). Consumers appreciate the extensive assortment of large stores and will travel for longer distances to

gain such an environment. Although, parking facilities have to be easy accessible and for free (Evers et al., 2005).

Contemporary consumers are high-demanding and aim for a convenient- but also an attractive and entertaining environment as became clear from section 2.2.2. While the existing retail structure has a good base, it becomes more difficult to respond to the changing needs of the customer by its increased service - and product expectations, for example the utilitarian store value of opening hours (Expertteam Detailhandel Noord-Brabant, 2013; HBD, 2011; Diep & Sweeney, 2008). Experience and atmosphere are also seen as important characteristics of a shopping area, especially for woman. However, goal-directed consumers may be detracted by store environments focussing on pleasure and excitement (Diep & Sweeney, 2008).

As mentioned in section 2.2.1 a city centre can be visited for several purposes such as shopping, business or leisure. The city centre is often visited for more than one purpose or motivation because of the high number of functions present, called multi-motivation or multi-purpose (Evers et al., 2005; Seip & Ashworth, 1998). That it is important for shopping areas to possess recreational facilities such as cinemas, restaurants or coffee shops does become clear by the fact that large shopping malls and department stores are accommodating them (Hsiao, 2009). Although, Kemperman, Borgers and Timmermans (2009) found out that tourists in Maastricht, a city in the southern part of the Netherlands, are not affected by location of restaurants and cafés concerning route choice behaviour. According to Hsiao (2009) in Taiwan shopping is often one activity in a multi-purpose trip. Especially on the way home from work shopping activities are popular, for low travel cost and travel time regarding shopping activity. However, in the Netherlands, most of the shopping trips are made out of home and are not combined with other purposes such as work (Evers et al., 2005).

Because of increased mobility during last decades, accessibility is of importance including availability and prices of parking faciliites. The distance consumers are willing to travel depends on the shopping motivation. The consumer will prefer a shopping area with parking facilities and tariffs proportional to the retail offer and seems less sensitive to distance when it comes to a recreational shopping day (Kennisplatform Verkeer en Vervoer, 2013; Janssen, 2011; HBD, 2011; Hsiao, 2009; Kemperman et al., 2009).

2.2.3 Lifestyle & socio-demographic factors

Consumer behaviour and average time spent on shopping is not only influenced by spatial aspects as described above but also by socio-demographic or socio-economic factors or lifestyle as Finn and Louviere investigated (1990). Gender, age, family composition and life cycle, household income, car-ownership and the amount of time spent working do all play a role in shopping behaviour (Geiger, 2007; Evers et al., 2005). For example, Bellenger and Korgaonkar (1980) found that recreational shoppers are mainly women. Ferris, in Dijkgraaf and Gradus (2003) investigated that the higher the female participation the lower the choice for early shop closing hours. Besides, Diep and Sweeney (2008) found that women have a higher sensibility regarding hedonic shopping trip value and utilitarian store value. Utilitarian product value is more appreciated by men. Cauter-de Jonge (2013) already investigated age as a determining factor in consumer preferences regarding their experience of determinants on shopping behaviour. Besides, influenced by the fact that spare time has

decreased by an increase in dual-income households, the demand for inner city centres offering a complete leisure experience increases (Janssen, 2011).

The changed/changing consumer
As well as changes in the shopping environment throughout the years, also the society and shopping behaviour changed. There are different aspects which influenced consumer behaviour. For example, the income growth by the increase of woman participating in the labour market. However, expenditures on retail did not grow proportionally; other goods and services such as leisure activities gained consumer demand. Increased working hours resulted in a decrease in spare time, and therefore run-shopping did become more important because of efficiency reasons, by for example doing groceries while commuting between work and home. Besides, Molenaar (2011) states that trends such as experience and spending free time become more and more important, influenced by the rise of internet shopping. Last decades leisure shopping did become an experience in itself instead of an activity to satisfy needs; resulting in increased competition between different leisure possibilities. Therefore attractive shopping environments with an extended retail offer and restaurants are aimed at (Janssen, 2011; Leask, 2010; Chiang, 2001).

In general consumers become more individualistic. Both literally, by the fact that forty per cent of households will consist of only one person in 2020, as well as their lifestyle characterized by their preferences to purchase products online because of restricted opening hours and less available time. Especially in the Dutch larger cities the one person households will become more dominating. Other influences concerning society as a whole are the greying and dejuvenation of society, and also the colouring of the population by having more and more foreign inhabitants in mainly growing cities. Other areas shrink inducing a decrease of required shopping surface (HBD, 2011). From those demographic, socio-economic and socio-cultural developments, another aspect is worth mentioning; the increased mobility last decades. This influences the shopping landscape because of increased service areas and higher requirements regarding accessibility and availability and prices of parking facilities (Evers et al., 2005).

All these developments do result in different societal needs regarding shopping behaviour. The ability to shop online instead of personally visiting a physical store has largely changed the way shopping is incorporated in consumer's everyday life in the past decade (Hsiao, 2009). Therefore it might be interesting to reconsider current opening hours in order to compete with online retailers (HBD, 2011). According to Geiger (2007) 24-hour opening up of supermarkets results in new lifestyles whereby consumers visit stores during formerly unconventional hours.

2.2.4 Physical stores versus online shopping
According to Janssen (2011) "E-commerce has increased enormously over the last decade. In 1998, only 16% of the Dutch population was connected to the Internet". In 2011, 78% of Dutch inhabitants bought products online which they bought in a physical shop before. Shopping online is popular for certain reasons. According to Chiang (2001) convenience and price are major driving forces and strongly influence consumers' intention to shop online. Convenience is mainly important when shopping is not a leisure activity. People shop more often online when they think offline shopping is inconvenient (HBD, 2011; Janssen, 2011; Hsiao, 2009). Consumers will get information, get inspired by being sensory stimulated

(HBD, 2011). Another important argument to buy online is the 24 hour availability of products which ensures people to shop on the moment they want. Physical shops do have restricted opening hours and are mainly closed after regular working and study hours, this is no problem because consumers are able to buy online. Therefore opening hours seems to be an interesting and important aspect to further investigate (HBD, 2011).

The retail landscape is influenced by online shopping. The stages of information gathering, transaction/purchase and delivery are important in the shopping process considering shopping online or shopping in physical stores. Chiang (2001) takes into account the information acquisition stage. According to Farag et al., cited in Hsiao (2009), "Empirical research shows that nowadays many individuals tend to start their shopping process with an information search on the internet before they go to the store, and many others to search for a product online or go to a shop to gain information about the product, check it out, and finally buy it online." Using two or more modes to purchase goods is defined as Omni channel shopping.

However, physical stores do have advantages over online shopping through the pleasure gained from the combination between retail and leisure which is more attractive and can only be made in the physical environment. Therefore, the total entourage needs to get attention in order to amuse and inspire the contemporary consumers. A combination between restaurants, shops and other leisure oriented facilities is seen as a profitable mix (Evers, 2011). Also the already mentioned opening hours seem an interesting aspect. An investigation by ATCM (in HBD, 2011) points out that opening hours are a solution for decreasing spare time of consumers, the sales volume in evening hours is 50% larger than on early hours of the day.

2.3 Opening hours: a solution?

According to Landry (2000) "We make transactions in the 24-hour world of cyberspace, yet the opening hours of most institutions continue to be based on a nine to five routine."

This means that opening hours of physical retail facilities will ask for another way of thinking in order to respond to consumers' demand. Especially large and medium-sized cities are of interest because these areas consist of a mix of both large stores, which have better coordination possibilities to extend their opening hours, and other type of leisure facilities. In this way a combination between shopping behaviour and leisure is made (Kosfeld, 2002). As the Taskforce DeeltijdPlus (2010) report has already stated, in the Netherlands there is need for a service economy no longer bounded to the nine-to-five norm. It might be beneficial for consumers when they have increased freedom in choosing their shopping times. Dual-income couples have higher social demand regarding shop openings in evenings and on Sundays/unrestricted shopping hours in order to balance demands on their time effectively because of work during week days and therefore a higher cost of time than in single income families. Online retailers anticipate to those needs by being on-line all time for example; the highest amount of visitors is measured when physical shops are closed. Although the most online purchases are done during physical shop opening hours (CBW-MITEX, 2010; Willmott & Nelson, cited in Geiger, 2007; Dijkgraaf & Gradus, 2004; Rouwendal & Rietveld, 1998; Nooteboom, 1983).

But less is known about the consequences of a shift in retail opening hours on consumer shopping and leisure behaviour. According to Geiger (2007) "An extension of opening hours can attract regular shoppers looking for a more suitable allocation of their shopping times and can present a real alternative to the existing shopping times". Convenience and time management are important reasons to make use of extended opening hours. Kosfeld (2002) found out that in Germany the majority of consumers declare to profit from extended opening hours, however within 20 months after the amendment of 1996 a third of the shops decided to go back to pre-regulation shopping hours because of larger fixed costs and insufficient consumer demand. Although, "the argument based on insufficient demand may perhaps explain heterogeneity with respect to opening hours *across* different branches (e.g., consumers may like to buy books or food at night but not cars)". Besides, shop-location may be determinative concerning the extension of opening hours, especially the large stores and those located in city centres are successful. Stores in the city centre have advantages by the high concentration of shops and together they create an attractive environment with a large variety in products and shopping opportunities to the consumer (Dijkgraaf & Gradus, 2003).

Legislation on opening hours
"In the Netherlands, the legal regime of opening hours has substantially been liberalized in 1996" (Rouwendal & Rietveld, 1998). From June 1996 shops are allowed to open from six in the morning to ten in the evening, also Sunday afternoon-openings were legalized 12 times a year and 52 times in touristic regions (Dijkgraaf & Gradus, 2003). According to the fear of small businesses, major supermarket chains extended their opening hours from 53 hours per week to 73 hours in 2012 resulting in a decrease in total number of supermarkets at the expense of small supermarkets (Deloitte, 2012). Already in 1983, Nooteboom investigated the same development, larger shops and chain stores do have more advantages from opening hour extensions.

Restrictions in opening hours are mainly influenced by social and religious arguments, in contrast to economic reasons (Rouwendal & Rietveld, 1998). According to Dijkgraaf and Gradus (2003) employment will increase by longer opening hours, due to increasing threshold labour, but maybe also to increased sales by relaxation of time constraints for consumers.

In the Netherlands, already a huge amount of facilities are opened during evening hours, think about supermarkets which extended their opening hours by the new shopping hours regulation in 1996, but also sports facilities, restaurants and cinemas. The opening up of retail facilities in inner city centres can have a significant impact on shopping habits, motivations and behaviours resulting in a change in consumer lifestyles and the Dutch society as a whole (Geiger, 2007). For example when one goes shopping directly on his or her way home from work, instead of driving an extra time in the weekend. As Hsiao (2009) stated "Shopping trips are mostly chained with other out-of-home activities. Specifically, shopping is often not the only purpose as consumers go out". On its time this can result in extra infrastructural pressure or congestion with consequences for the inner city road network and parking facilities. Next to this infrastructural pressure and the need for extra personnel, especially for inner city residents, another negative side-effect will be the nuisance of visitors during extended opening hours.

Jacobsen and Kooreman (2005) investigated the influences on consumer grocery shopping behaviour to add to the literature on shopping regulation effects after the change in shopping hour regulations in 1996. "An important argument for extending the shopping hours has been that it would enable people with a full-time job to not only shop on Saturdays (and the single evening during which shops were open under the pre-1996-regime), but also on weekdays." As a result a decrease in shopping time during the day and an increase in total hours spent on shopping can be seen for (almost) full time workers, which means both shopping during evening hours and Sunday afternoons gains popularity. This increase in total time spent shopping makes clear that consumers were constrained under the pre 1996 shopping laws regime. Also for households consisting of two (almost) full time working partners a change in time division can be seen. Shopping hour constraints for Sunday afternoons were regulated at municipality level and therefore the opening up of supermarkets on Sunday afternoon did take a longer time. For example, in 2003 32% of municipalities did not allow supermarkets to be open on Sunday afternoon. At this moment the discussion about Sunday opening of retail facilities in city centres is ongoing. It is also up to municipalities to decide whether shops may open or not, and how many times a year, Bijenkorf is already open every Sunday.

By opening up shops on Sunday, parking demand will increase (Goudappel Coffeng, 2014). Other effects from an opening hours extension will be economic growth, employment and welfare gains for consumers by extended opening hours (Dijkgraaf & Gradus, 2004). Rouwendal and Rietveld (1998) investigated that consumer welfare increases by opening up the most preferred shops. Besides, they concluded that "Restrictions will not be beneficial to society". In their research night shops, shopping facilities at gasoline stations and fast food providers experienced a reduction in profitability after 'normal shops' as supermarkets extended their opening hours after liberalized opening hour regulations in 1996. According to Blaauwberg (2013) supermarkets and department stores benefit from increasing sales with opening up on Sundays, in contrast to small retailers suffering from a limited sales volume.

2.4 Conclusion

Where supply created demand before, the last years consumer-dependency of shopping areas has become quite clear. In the Netherlands the inner city centre, popular for retail, is responsible for an important part of the national economy and culture. Developments in retail have deep spatial and societal impact and are indicators of economic health. Notwithstanding cyclical sensitivity, structural changes occur and a new revolution era is entered since the fifties. With the rise of internet, shopping behaviour changes and the extended retail market is saturated, causing increasing retail vacancy rates. It is important to take into account the new consumer society because of its continuously changing behaviour and its contribution to and influence on the vitality of the shopping landscape in inner cities. With demographical developments as increased working hours another approach is needed. Because of decreased spare time, shopping becomes more and more an experience activity and competition of internet grows from the possibility to buy products 24/7 online. The service economy is no longer bounded from nine to five while opening hours of physical shops still are. For retailers, it is important to deliver value and satisfy people-based needs to gain a stronger position. At the moment, an extension of opening hours in inner city

centres seems an interesting measure to stimulate the retail landscape and increase welfare, although there is no insight in consequences for shopping behaviour. Different consumers behave differently and also gain value from a shopping trip differently. Considering determinants of shopping behaviour, especially accessibility including parking facilities and a large selection of stores are valued high.

3. RESEARCH DESIGN

From the literature review, it can be concluded that the influence of consumer behaviour regarding shopping and the shopping landscape should not be overlooked. Especially since the current Dutch retail market is structurally becoming demand-driven, it is important to investigate consumers' preferences in order to broaden the chances of existing retailers and investment companies before the situation will even get worse. Structural vacancy leads to neighbourhood degradation and declining quality of life. This chapter will provide insight into the method applied during this research in order to gain insight in the consumers' preferences concerning possible future shop opening hours: A stated choice experiment.

3.1 Brabantstad as research area

The focus of the study will be on the Brabantstad network consisting of the province of Noord-Brabant and the cities Breda, Eindhoven, Helmond, 's-Hertogenbosch and Tilburg. The Brabantstad network aims at becoming a strong internationally competitive and sustainable growing urban network.

Information of the Brabantstad cities about the number of inhabitants, retail floor spaces, Sunday openings and parking tariffs is shown in table 3.1 below. As can be seen from the table, the number of inhabitants varies from around 90.000 inhabitants (Helmond) to around 220.000 inhabitants (Eindhoven); Eindhoven has the highest amount of retail floor space however also has the highest percentage of retail vacancy. In all cities shops are open almost every Sunday, and parking tariffs vary between 2 euro and 2 euro and 50 cent per hour.

Table 3.1 Characteristics of Brabantstad cities

Characteristics		Municipality				
		Breda	Eindhoven	Helmond	s-Hertogenbosch	Tilburg
Nr of inhabitants*		178.140	218.433	89.346	142.817	208.527
Retail floor space	In m² (municipality-level)**	364.570	384.030	158.200	269.130	296.490
	Vacancy***	6.8%	9.6%	9.0%	< 6.0%	8.8%
Sunday openings	Yes/No	Yes	Yes	Yes	Yes	Yes
	Total nr of Sunday openings in 2014	49	53	53	55	56
Parking tariff	In euros per hour (in city centre)	2.00	2.20	2.00	2.50	2.20
	Monday till Saturday	9:00 AM - 10:00 PM	9:00 AM - 9:00 PM	8:00 AM - 7:00 PM (Friday till 10:00 PM)	9:00 AM - 12:00 AM	9:00 AM - 6:30 PM (Friday till 9:00 PM)
	Sunday	12:00 PM - 6:00 PM	9:00 AM - 9:00 PM	12:00 PM - 5:00 PM	2:00 PM - 12:00 AM	12:00 PM - 5:00 PM

* Data from CBS (1st of January) 2014
** Data from HBD 2012
*** Data from PBL 2013

In this research, the Brabantstad cities are seen as representative for Dutch cities in general. Five cities are investigated because of concreteness of the research in order to gain more accurate responses. By investigating an urban network, the outcome will become more representative for Dutch medium sized cities in general, in comparison to investigating only one city.

3.2 The stated choice experiment

Stated choice modelling, introduced by Louviere and Hensher in 1982 and Louviere and Woodworth, in 1983, is a method applied in order to investigate consumers' preferences

and market shares regarding hypothetical alternatives. By presenting different mutually exclusive future alternatives, or scenarios (composed by means of experimental designs), respondents are asked to choose the scenario they consider best, a first-preference choice task (Hensher, 1994). According to Ben-Akiva and Lerman (1991) "a decision maker is modelled as selecting the alternative with the highest utility among those available at the time a choice is made. The true utilities of the alternative are considered random variables, so the probability that an alternative is chosen is defined as the probability that is the greatest utility among the available alternatives."

Kemperman (2000) and Hensher (1994) both define a sequence of required tasks to be undertaken in constructing a stated choice experiment. Kemperman (2000) distinguishes 6 steps: *elicitation of influential attributes; specification of relevant attribute levels; choice of measurement task; selection of experimental design; constructing the questionnaire; and analysing the results.* Hensher (1994) identifies 7 tasks: *identification of the set of attributes; selecting the measurement unit for each attribute; specification of the number and magnitudes of attribute levels; statistical design; questions and showcards for execution in the data collection phase; estimation procedure; obtain predictions.* Together those distinguished tasks will be combined, resulting in the following five key steps:

- Elicitation and identification of influential attributes;
- Specification of relevant number and magnitudes of attribute levels;
- Composing choice alternatives using an experimental design;
- Constructing the questionnaire, including choice tasks;
- Model estimation.

3.2.1 Elicitation and identification of influential attributes

In order to identify influential attributes, first a literature review is conducted. As can be concluded from the literature review paragraph 2.2.2, different determinants on shopping location choice are distinguished. According to Kemperman (2000), it is important to have a limited number of attributes per alternative because of task complexness. Too few attributes is undesirable because the tasks will become unrealistic; subsequently it becomes difficult to imagine what an alternative represents. However, in terms of investigating meaningful behavioural responses, it is desired to have a "sufficiently rich set of attributes and choice contexts together with enough variation in attribute levels" (Hensher, 1994).

Regarding the opening hours of retail facilities in the city centres of Brabantstad, attributes are elicited from the attributes identified in the literature review, keeping in mind that shopping should be as convenient as possible otherwise people will not visit the inner city centre but will buy elsewhere.

Retail offer in three types
First of all, an influential and frequently mentioned aspect distinguished by several researchers is the selection of shops, or the assortment, in other words: the completeness of the retail offer. Especially fashion and department stores, multimedia and sports are seen as main triggers attracting consumers to a city centre. In this research, the retail offer is linked to opening hours and according to Locatus (2013); validated by- and adapted with professionals from the field, three types of shops are distinguished as three separate variables here: **Fashion** (and luxury)-; **beauty**-; (media and) **leisure** shops. Shops in the

fashion and luxury segment consist of department stores, clothing and fashion-, footwear and leather goods-, jewellery and optics, household and luxury items-. Examples of fashion and luxury stores are: Zara, Riverwoods, C&A, Bijenkorf, VD, HEMA, Manfield, van Haren, Xenos, Lucardie, Six, Eye Wish, etcetera. With beauty shops, shops such as Rituals, Body shop, Etos, Kruidvat, Trekpleister, De Tuinen, ICI Paris XL and Douglas are meant, marketing personal care goods. Media and leisure shops offer items in sports and games, hobby, media, antics and art; examples are Mediamarkt, Belcompany, BCC, Hi, Intersport, Perry, Polare, D-reizen, Music-stores.

Parking tariffs
Another aspect getting attention in literature is the parking tariff. Because of increased mobility during the last decades, prices of parking facilities become more and more of interest. As mentioned in the literature review, parking tariffs have to be proportional to the retail offer and will influence the service area of a city. It is interesting to investigate the influence of parking tariffs in evening hours on shopping behaviour and mode of transport used. Therefore parking tariff will be included as an alternative attribute.

Both the shop type-variables and the parking tariff together are included in the alternatives and choice tasks. Besides, other important variables are used as context variables for the choice sets (see below), which means that those variables do not vary but are used to set the context (Hensher, 1994; Dellaert, Arentze & Timmermans, 2008).

Context
The first context variable is the shop opening time; the time shops open in the morning will remain unchanged from the current situation. Second one is the accessibility (frequency) by public transport, which will always be the same as during the day. The opening hours of other facilities such as restaurants, cinemas and services is the third context variable. A combination between restaurants, shops and other leisure oriented facilities is seen as a profitable mix and the opening hours of the leisure facilities will therefore be adapted to the opening hour of the type of shops offering the latest opening hour in the proposed situation, be it the fashion-, the beauty- or the leisure stores.

3.2.2 Specification of relevant number and magnitudes of attribute levels

After the identification of attributes, attribute levels and attribute level labels should be determined (Hensher, Rose and Greene, 2005). Overall design complexity is derived from the number of attribute levels and the combination of levels generated. According to Kemperman (2000), it is more difficult to construct a design with attributes consisting of a different number of levels. Therefore, all attributes included in this study will have three levels. Each attribute level gives information about the part-worth utility of a particular attribute. With three levels, ranges between these part-worth utilities will indicate non-linear relationships between the attribute levels for the distinct attributes (Hensher et al., 2005).

In order to have feasible attribute levels within the range of current experience and believability (a primary consideration), unambiguous attribute level labels are assigned as shown in table 3.2. For the three types of shops the closing hours will be 6:00 PM, 8:00 PM, and 10:00 PM. In the cities investigated the actual closing hour of shops in the city centre is 6:00 PM every day except for Sunday (5:00 PM average) and one day late night shopping. In

Eindhoven and Helmond there is late night shopping every Friday; in Breda, Tilburg and 's-Hertogenbosch every Thursday night. In Breda Media Markt is opened till 10:00 PM on weekdays. By the fact a three-level attribute contains more information than a two-level attribute, 6:00 PM and 10:00 PM are chosen as extreme ranges; to have a good diversification 8:00 PM is chosen as intermediate level (Hensher, 1994). Besides, parking tariff will be normal, which means the prices are the same as for the day-period, 50%-discount, or for free.

Table 3.2 Attribute levels

Attribute		Level
Opening hours	Fashion	6:00 PM
		8:00 PM
		10:00 PM
	Beauty	6:00 PM
		8:00 PM
		10:00 PM
	Leisure	6:00 PM
		8:00 PM
		10:00 PM
Parking tariff (after 6:00 PM)		Free
		50%
		Normal

It is assumed that the attributes are ordinal because of an expected natural order amongst the attribute levels, expected is that respondents prefer later closing hours above earlier closing hours and free parking tariffs above the normal tariff (Hensher et al., 2005).

3.2.3 Composing choice alternatives using an experimental design

Now all stimuli are identified and refined; the number of attributes, attribute labels, attribute levels and attribute level labels, the selection of the experimental design is decided upon (Hensher et al., 2005). In the controlled stated choice experiment respondents are asked to choose out of two hypothetical unlabelled alternatives and a 'no-choice'. Unlabelled experiments have benefits over labelled alternatives by more likely meeting the independently and identically distributed (IID) model assumption and by less chance for perceptual assumptions decision makers may hold for labelled alternatives. The 'no-choice'-alternative is a base alternative respondents can choose when none of the presented alternatives is attractive enough to be selected in order to obtain predictions of total demand (Hensher, 1994; Kemperman, 2000). According to Hensher et al. (2005) "Unrealistically forcing decision makers to select among the available alternatives is likely to over inflate any estimates obtained".

The alternatives are constructed by combining varying attribute levels through an experimental design. A design coding format is used to represent all possible combinations in order to meet the global utility maximizing rule, assigning numbers to all separate attribute levels, as shown in appendix 2 (Hensher et al., 2005). When all possible combinations of the attribute levels are enumerated, a full factorial design for this unlabelled experiment is applied with a total of L^A combinations. Where L is the number of attribute levels and A the number of attributes. Here, the full factorial design consists of $3^4 = 81$ possible treatment combinations. Because of possible low response rates by a very

extensive questionnaire, the number of alternatives will be reduced to increase subsequently response reliability and result reliability. To reduce the number of choice sets, a fractional factorial design is adopted, which means only a fraction of the total number of treatment combinations is used (Hensher et al., 2005). Addelman's table is used to select treatment combinations for the fractional factorial design. Twenty-seven alternatives are selected ensuring main effects and first order interaction effects between the first three attributes (closing hours of shops) can be estimated independently, see appendix 2 for the experimental design. In contrast to the fractional factorial design, a full factorial design gives the possibility to determine all main and all interaction effects. Interaction effects are influences that a specific combination of two attributes' levels can have on the alternative's utility and variables (attributes' levels) have to be considered collectively in case of significant interaction effects. However, the largest amount of variance in the response data is influenced by main effects, effects of the separate attributes(' levels) independently on the response variable. The fractional design is still orthogonal, which means that attributes vary independently, without inter-attribute correlations in order to gain a correct insight in consumers preferences per attribute (Hensher, 1994; Kemperman, 2000; Hensher et al., 2005).

After the 27 alternatives were selected, choice sets were designed. Initially, all possible pairs of the 27 alternatives are used to create choice sets. However, attribute levels of one alternative may outperform the other alternative's attribute levels. Therefore some choice set combinations were seen as less realistic. In order to preclude unreliable responses, such combinations (for example later closing hours for all types of shops and lower parking tariff) are removed from the design. By adapting the parking tariff variable code from the Addelman's table the experimental design was optimized, resulting in 237 suitable choice sets out of 351 in total. As a sampling strategy, those choice sets are presented randomly, to overcome possible biases from order effects, to respondents by using an in home developed questionnaire-system (Jessurun, 2007).

3.2.4 Constructing the questionnaire

In general, a questionnaire should be short, easy and realistic in order to obtain satisfactory data quality containing the information sought for. To be more specific, according to Kemperman (2000) the following aspects should be taken into account.

Instructions should be simple and straightforward; differences in interpretation should be avoided by administering task uniformly; examples of attribute combinations for practice should be given; contextual information to set the domain of the experiment should be given; and information about the objectives of the experiment should be clear.

For this research the questionnaire consists of three parts, preceded by a general introduction page and ended with a word of thanks. The first part of the questionnaire was designed to answer the sub-question *'What is typical shopping behaviour of visitors in inner city areas of medium sized Dutch cities?'*. Aspects determined from literature are investigated, including the trip origin, mode of transport used, shopping in company or individual, type of products shopped for, shopping for hedonic or utilitarian values etc.

In the second part, questions about possible future behaviour are asked. This part also contains the stated choice experiment and intends to answer the sub-question *'What are*

ideal opening hours and parking tariffs, and how would these opening hours and parking tariffs influence consumer behaviour?'. In order to answer the second part of the sub-question, two randomly selected future scenarios (out of 27 scenarios from the experimental design) with additional questions are presented to each respondent. First, a scenario is presented and three statements (whether a respondent proposes to shop later, longer or more often) have to be evaluated. When a respondent responds positive to at least one of three statements, additional questions are presented. Those additional questions are in line with the current shopping behaviour-part, giving the opportunity to investigate possible changes in shopping behaviour by implementing a future scenario; aspects investigated are again the trip origin: 'Assuming this situation, from which location would you visit the downtown of city X?'; mode of transport used: 'Assuming this situation, which mode of transport would you use to visit the downtown of city X for shopping purposes?'; combined activities such as a restaurant or cinema visit for example: 'Assuming this situation, how frequent would you combine your shopping trip to city centre of city X with the activities or facilities listed below?'; enjoyment or efficiency shopping: 'Assuming this situation, would you shop for pleasure in the downtown area of city X?' and 'Assuming this situation, would you shop for efficiency purposes in the downtown area of city X?'; and shopping in company or alone 'Assuming this situation, would you usually visit the city centre of city X in company or alone?'. In order to answer the first part of the sub-question, respondents are asked to choose their preferred alternative from the choice sets consisting of three alternatives: two selected from the experimental design of 27 plus the aforementioned 'no-choice'-alternative (Hensher, 1994). As already mentioned 237 choice sets were generated beforehand and each respondent got a random subset consisting of five of the generated choice sets; asking five times for their choice from one of the two proposed situations or the 'no-choice'-alternative.

Finally, the questionnaire will be concluded with some general questions regarding socio-demographic and socio-economic aspects. As noted in literature study part 2.2.3 gender, age, family composition, household income and the amount of time spent working do all have influence on shopping behaviour and therefore are investigated in this part of the questionnaire. The total survey instrument is displayed in appendix 3.

Data collection
A cross-sectional online survey is spread out using two different sources, PanelClix, a commercial company, arranged 597 respondents and also by snowballing 162 respondents were approached (Coleman, 1958-1959; Goodman, 1961). Regarding the second method, first acquaintances are approached personally on the 11th and 12th of March 2014, after one week a public reminder message is sent by social media (20th of March 2014). Respondents from 16 years and older are included in the research.

Analysis
In this research, consisting of three parts, the first en last part are analysed: using frequency- and cross tables. The second part of the questionnaire, consisting of the stated choice experiment is discussed in more detail below.

3.2.5 Model estimation
According to Kemperman (2000) "estimation procedures depend on the type of data, the specification of the utility function and the specification of the choice process".

Choice data is gained by repeated individual observations and maximum likelihood estimation is used to estimate the parameters. The dependent variable here is the choice for an unlabelled scenario (the 'new' city centre) or the 'no-choice' alternative, for the independent variables the attribute levels are coded by means of effect coding, as shown in the following table.

Table 3.3 Effect coding scheme

Attribute		Level	Effect coding	
Opening hours	Fashion	6:00 PM	1	0
		8:00 PM	0	1
		10:00 PM	-1	-1
	Beauty	6:00 PM	1	0
		8:00 PM	0	1
		10:00 PM	-1	-1
	Leisure	6:00 PM	1	0
		8:00 PM	0	1
		10:00 PM	-1	-1
Parking tariff (after 6:00 PM)		Free	1	0
		50%	0	1
		Normal	-1	-1

A three level attribute is represented by two codes, as becomes clear from table 3.3. Besides, also an alternative specific constant is added with value 1 for the hypothetical unlabelled alternatives, value 0 for the 'no-choice' alternative. See appendix 2 for an overview of the dataset.

In formula, the probability that an individual chooses alternative i from a choice set A is expressed as:

$P(i|A) = P(U_i > U_j)$, all $i \neq j$

Where U_i is the utility for alternative i. This is in accordance to the concept of random utility, introduced in psychology by Thurstone in 1927 (Ben-Akiva & Lerman, 1991).

In random utility theory, the utility U_i for an alternative (i) is defined as:

$U_i = \Sigma_n \beta_n X_{in} + \varepsilon_i$

with **$\beta_n X_{in} = v_{in}$**
and **$\Sigma_n v_{in} = \Sigma_n \beta_n X_{in} = V_i$**

Where β_n is the parameter representing the relative influence of variable n on the utility of alternative i. X_{in} represents the score of attribute n as part of alternative i. Resulting in v_{in} which is the partial utility of attribute n as part of alternative i. The sum of v_{in} provides V_i, which is the structural component of utility of alternative i and ε_i the random error component reflecting inconsistencies and measurement errors.

The error component is assumed to be independently and identically double exponential (or Gumbel) distributed (IID). As shown by McFadden (1974), the Gumbel distribution results in the multinomial logit model (MNL). Kemperman (2000) states that "the multinomial logit model is the most widely applied model in discrete choice analysis to predict the probability that a choice alternative will be chosen."

This probability is calculated by:

$$P(i|A) = exp(V_i) / \Sigma_j exp(V_j)$$

Where P(i|A) is again the probability that an individual chooses alternative *i* from a choice set *A,* and V_i is again the structural utility of alternative *i*.

The overall model performance can be expressed by means of the model fit. This goodness of fit of the choice model will be determined by the Rho^2 introduced by McFadden:

$$Rho^2 = 1 - LL_{estimated\ model} / LL_{base\ model}$$

With $LL_{base\ model} = \Sigma\ ^N_{i=1} ln(1/number\ of\ alternatives\ per\ choice\ set)$

$LL_{estimated\ model}$ (also LL(β)) is the log likelihood of the model with the estimated parameters. The log likelihood will be maximized by parameter optimization. $LL_{base\ model}$ (Also LL(0)) is the log likelihood of the null-model with $\Sigma\ ^N_{i=1}$ as the total number of observed choices-tasks, and all parameters (β) equal to zero signifying equal choice probabilities, here 1/3 because of three alternatives per choice set (Hensher et al., 2005).

The closer the Rho^2 to one (in a range from zero to one), the better the overall model performance. Models with values below 0.10 are considered weak, model-values between 0.20 and 0.40 have a satisfactory model fit. Parameters $β_n$ will be estimated with NLOGIT 5 (Greene, 2012).

Interaction effects
Interaction effects will be measured giving insight in possible partial utilities which are strengthened or impaired by merging opening hours of two type of shops. Interaction variables are created by multiplying effect codes for each combination of the opening hour category.

Binary logistic regression
Binary logistic regression is applied to investigate influences of attribute levels and demographics on shopping behaviour. The probability a consumer decides to shop later, longer, or more often dependent on opening hours, parking tariff and demographic aspects will be calculated. The questionnaire offered four options to answer these questions: never, sometimes, most of times, and always. For the analyses, the never-category is recoded into No, while the other options are recoded into Yes, see table 3.4:

Table 3.4 BLR coding

		Predicted variables		
		Later	Longer	Often
Binary codes	No	0	0	0
	Yes	1	1	1

The attribute levels and demographical variables are coded by means of dummy coding, as follows:

Table 3.5 Dummy coding scheme

Attribute		Level	Dummy coding		
Opening hours	Fashion	6:00 PM	1	0	
		8:00 PM	0	1	
		10:00 PM	0	0	
	Beauty	6:00 PM	1	0	
		8:00 PM	0	1	
		10:00 PM	0	0	
	Leisure	6:00 PM	1	0	
		8:00 PM	0	1	
		10:00 PM	0	0	
Parking tariff (after 6:00 PM)		Normal	0	0	
		50%-discount	0	1	
		Free	1	0	
Gender		Female	1		
		Male	0		
Age		< 30 years	1	0	
		30-49 years	0	1	
		50 years and +	0	0	
Occupation		Fulltime	1	0	0
		Part-time	0	1	0
		Student	0	0	1
		No work	0	0	0

With binary logistic regression, the effects of the independent predictors (opening hours, parking tariffs, age, gender and occupation) on a dependent dichotomous (No or Yes) outcome variable (later, longer, more often) is calculated by the same formula as with the MNL model:

$P(i|A) = exp\ (V_i)/\ \Sigma_j\ exp\ (V_j)$

Whereby $V_i = \Sigma_n\ \beta_n\ X_{in}$ for the Yes-option and Vi=0 for the No-option, simplifying the equation to:
$P_{yes} = exp\ (V_{yes})/exp\ (V_{yes}) + 1$

and

$P_{no} = 1/exp\ (V_{yes}) + 1$

Parameters β_n will be estimated by optimizing the loglikelihoodfunction.

3.3 Conclusion

A stated choice experiment is conducted to gain insight into consumer shopping and leisure behaviour. From literature, attributes were selected and scenarios were designed and presented to respondents by an online questionnaire. The questionnaire is designed according to the sub-questions:

- *'What is typical shopping behaviour of visitors in inner city areas of medium-sized Dutch cities?'*
- *'What are ideal opening hours and parking tariffs, and how would these opening hours and parking tariffs influence consumer behaviour?'*

In order to answer the main research question:

'How do extended opening hours of different types of retail facilities in medium-sized city central shopping areas influence consumer behaviour, and what role do parking tariffs play in this context?'

With the first part of the questionnaire, current shopping behaviour is investigated. The second part of the questionnaire consists of investigating changes in behaviour by presenting new situations to respondents, followed by five choice set combinations where consumers are asked for their preferences concerning shop opening hours and parking tariffs. The questionnaire is ended with examining demographics. Respondents are gained from Panelclix and snowballing. Data will be analysed using MNL models and binary logistic regression.

4. ANALYSIS AND RESULTS

In this part of the thesis the results of the research are reported. The sub-questions: *'What is typical shopping and leisure behaviour of visitors in inner city areas of medium-sized Dutch cities?'* and *'What are ideal opening hours and parking tariffs, and how would these opening hours and parking tariffs influence consumer behaviour?'* will be answered and subsequently, the main research question: *'How do extended opening hours of different types of retail facilities in medium-sized city central shopping areas influence consumer behaviour, and what role do parking tariffs play in this context?'* will be answered. Both the research sample and the outcomes from the stated choice experiment, with MNL models and binary logistic regression analysis, will be discussed.

4.1 Research sample

Panelclix provided 597 completed questionnaires and by snowball sampling another 162 respondents were gained. For the latter group, the response rate turned out to be 170.5% which is highly satisfactory, especially because there were no benefits in participating for this group. Of the, in total 759, respondents who finished the questionnaire, 23 respondents have been removed from the sample because of not visiting one of the five proposed city centres of Brabantstad, or not visiting a city centre at all for shopping purposes. Therefore, these respondents were not in the target group for this research, resulting in a total of 736 respondents. Each respondent is presented five choice set combinations.

Demographics

With the questionnaire, socio-demographic and socio-economic characteristics are administered by asking respondents for their age, gender and occupation. In this way it is possible to get insight in and search for different groups in the research sample.
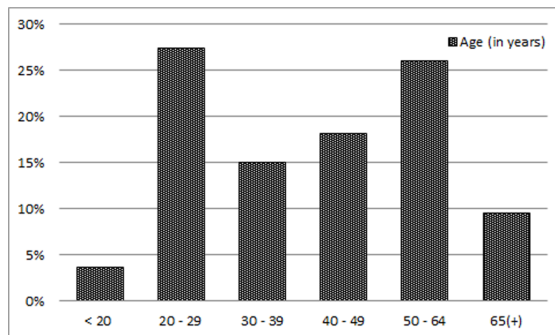

 Figure 4.1 Age distribution

Age

As can be concluded from figure 4.1, the age group 20-29 is highly represented, this also applies for the 50-64 group. The first one is a logical consequence of the respondents gained by snowball effect. Approached respondents were mainly in the age between 20 and 29, 106 out of 156 completed questionnaires are from respondents in this age group, a percentage of 68.0%. Besides, 57.5% of the respondents in these age groups is a student (61

out of 106). In the Panelclix sample the 50-64 group is responsible for the highest percentage, with 29.5% (n=171).
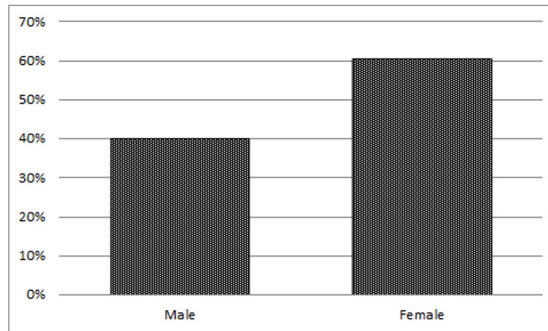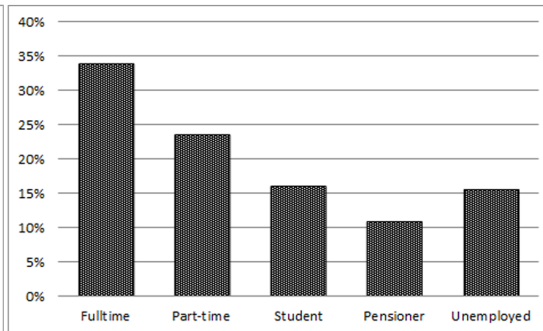

Figure 4.2 Gender   **Figure 4.3 Employment**

Gender

According to figure 4.2 most of respondents are female, 60.2% (n=443) of the total sample. Again the snowball sample is responsible for a higher percentage female (67.9%). Although, this may be logical because of the higher affection women have with shopping than men in general.

Employment

As can be concluded from figure 4.3 above, most of the respondents' occupation is in a fulltime (34.0%) or part-time (23.6%) job.

4.2 Current shopping behaviour

In order to answer the first sub-question *'What is typical shopping behaviour of visitors in inner city centres of medium sized Dutch cities?'* the results from the first part of the questionnaire are analysed.

City

As already mentioned the focus of the research will be on shopping behaviour in the city centres of the Brabantstad agglomeration. First, insight is gained in which city respondents mostly visit for shopping purposes. As can be concluded from figure 4.4, in this sample Eindhoven is the most visited city for a shopping trip and Helmond the least. Subsequently, shopping determinants are investigated for the mostly visited city centre. For example, 128 respondents said they most often shop in Breda (17.4% of the total sample), then their current shopping behaviour is measured for shopping trips to Breda.
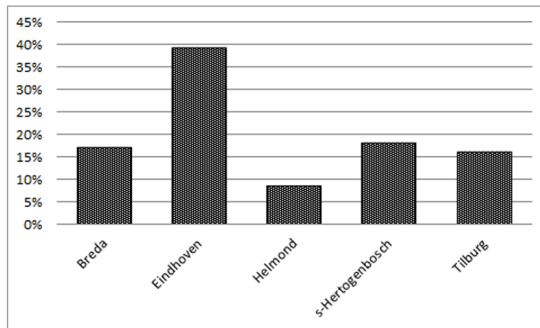
Figure 4.4 Most visited city for shopping

Results for all cities are merged in one dataset to gain an overall image on shopping behaviour in medium sized city centres (in this case of Brabantstad). In identifying current shopping and leisure behaviour, different aspects whether or not distinguished by demographic data will be discussed in more detail here. Appendix 4 gives a total overview of shopping determinants, only the most significant outcomes are discussed here. A combination with demographic data is made in order to gain more insight into group preferences and differences between specific groups, to give a more specific advice to stakeholders at the end.
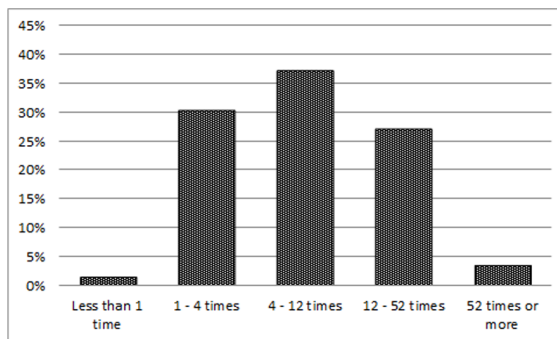

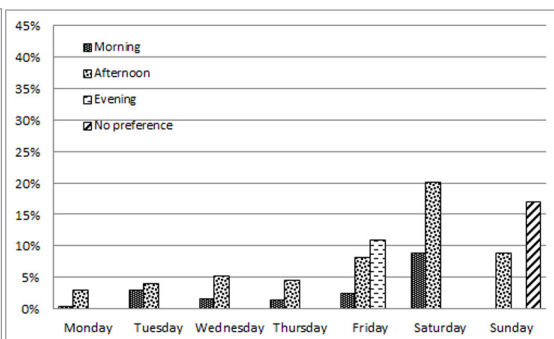**Figure 4.5 Visit frequency in last 12 months**

Figure 4.6 Visit day and time of day

Frequency, moment of visit and length of stay

Figure 4.5 gives an overview of the visit frequency (in preceding 12 months) for shopping purposes. It becomes clear that most of the respondents visited the city centre 4 to 12 times last year, with in general weekend-days and the shopping night as most popular shopping times, figure 4.6. Most respondents spent between 1 and 2 hours in the city centre for shopping.
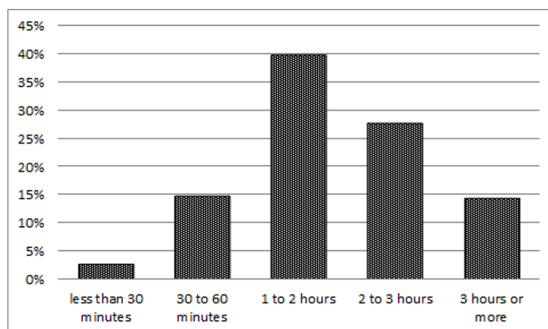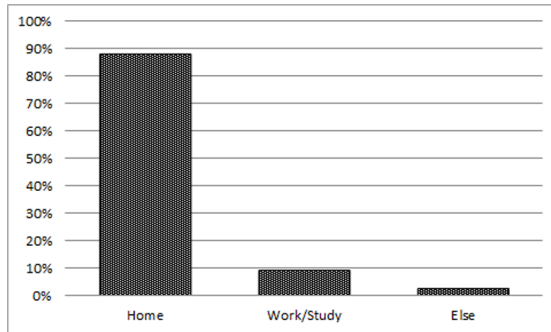

Figure 4.7 Modal time spent
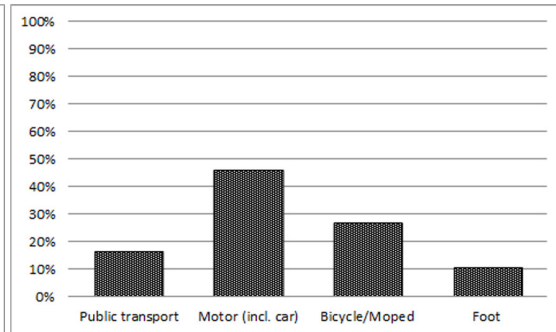
31

Figure 4.8 Trip origin

Figure 4.9 Mode of transport

Trip origin and mode of transport
Most of shopping-trips are made from home and by car (see figure 4.8 and 4.9), however especially students combine a shopping-trip relatively often with their study location (22%).
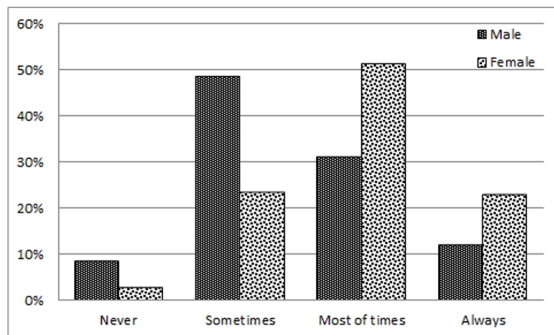
Figure 4.10 Enjoyment and gender
Chi^2: 73.237 Sig. 0.000
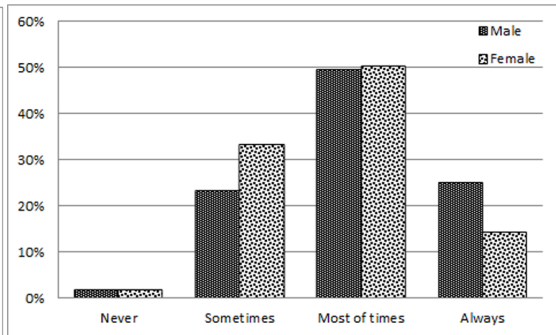
Figure 4.11 Efficiency and gender
Chi^2: 16.606 Sig. 0.001

Enjoyment and efficiency
As can be concluded from figures 4.10 and 4.11 above females do shop more for fun purposes as compared to males, the other way around, males are more visiting a city centre for efficiency reasons concerning shopping (25.2% of males always shops for efficiency reasons).
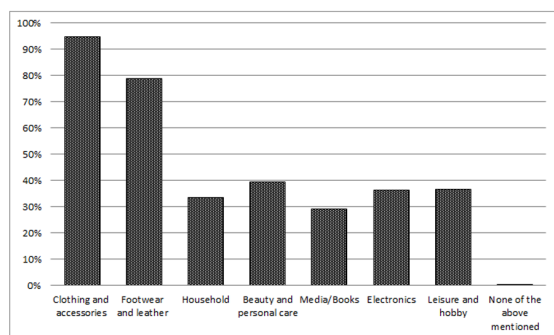
Figure 4.12 Product categories shopped for

Product categories
Almost all respondents visit the city centre for fashion products. Clothing and accessories is a motivation for 95% of the total sample; footwear and leather are also popular (figure 4.12).

4.3 Estimation of choice models

The sub-question *'What are ideal opening hours and how would these opening hours influence consumer behaviour?'* is key to this paragraph. The first part of this question will be answered with the Multinomial Logit Model. For the second part Binary Logistic Regression is elaborated upon.

4.3.1 Opening hour preferences

In the third part of the questionnaire five choice-situations were presented to each respondent. For each choice situation, respondents were asked to choose between two unlabelled alternatives and a third alternative; the 'no-choice'-option (attribute-levels coded 0). First, the data set is checked by analysing the descriptive statistics and examining the correlation structure, see appendix 5. Examining correlations in the dataset is important because of multi-collinearity in case of significant correlations resulting in non-orthogonal designs and parameters from such designs may be incorrectly estimated. An orthogonal design will only be secured by giving the entire design to each respondent or by a well-executed sampling strategy. The strategy used within this research is presenting random treatment combinations which has led to a return of incomplete designs. In addition, dominant alternatives were excluded from the choice set. However, the correlations are low enough to be neglected.

After the first check-up, main effects (figure 4.13 below) and first order interaction effects between the first three attributes (closing hours of shops) can be estimated given the respondents' choices. Only significant interactions are displayed below. Appendix 6 shows a complete table of all main and interaction coefficients.

Effect coding is used to represent the attribute levels both in estimation and prediction of the models (see also table 3.2). The following equations are used to calculate the partial utilities for the opening hours of shops in the categories fashion and luxury; beauty; and media and leisure:

6:00 pm	$(1 \times \beta_{FASHION1}) + (0 \times \beta_{FASHION2})$*
8:00 pm	$(0 \times \beta_{FASHION1}) + (1 \times \beta_{FASHION2})$
10:00 pm	$(-1 \times \beta_{FASHION1}) + (-1 \times \beta_{FASHION2})$

Concerning the parking tariff (after 6:00 PM) the following formulas have to be calculated:

Free	$(1 \times \beta_{PTARIFF1}) + (0 \times \beta_{PTARIFF2})$
50% discount	$(0 \times \beta_{PTARIFF1}) + (1 \times \beta_{PTARIFF2})$
Normal	$(-1 \times \beta_{PTARIFF1}) + (-1 \times \beta_{PTARIFF2})$

* For the part-worth utilities for beauty- and media and leisure-shops respectively the coefficients of $\beta_{BEAUTY1}$ and $\beta_{BEAUTY2}$ and $\beta_{LEISURE1}$ and $\beta_{LEISURE2}$ will be used.

Interaction effects are computed by creating new variables by multiplying corresponding attributes levels effect codes. Next, the model is estimated to obtain the parameters. The parameters are shown in figure 4.13 below.
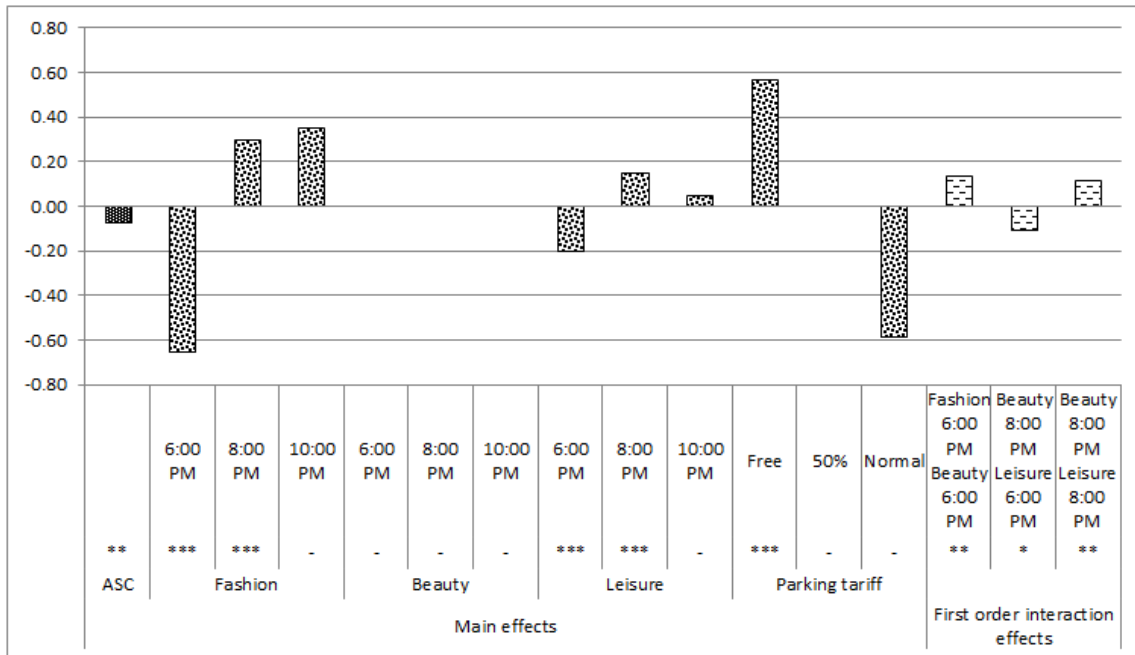
Figure 4.13 Parameter estimation
LL_M: -3749.80 LL_0: -4042.89 Rho^2: 0.07

		Main effects												First order interaction effects		
		6:00 PM	8:00 PM	10:00 PM	6:00 PM	8:00 PM	10:00 PM	6:00 PM	8:00 PM	10:00 PM	Free	50%	Normal	Fashion 6:00 PM Beauty 6:00 PM	Beauty 8:00 PM Leisure 6:00 PM	Beauty 8:00 PM Leisure 8:00 PM
	**	***	***	-	-	-	-	***	***	-	***	-	-	**	*	**
	ASC	Fashion			Beauty			Leisure			Parking tariff					

From partial utilities preferences regarding opening hours and parking tariff become clear. Although beauty opening hours are non-significant, interaction effects with beauty occur. McFadden's Rho^2 is calculated with the formula $1 - LL(\beta)/LL(0)$. With $LL(\beta)$ representing the log likelihood for the estimated model and $LL(0)$ the log likelihood for the null-model (all parameters equal to zero). It can be concluded that the model performance is weak as McFadden's Rho^2 is below 0.10.

To improve the model performance, the dataset is split up into three separate sets defined by age; Young (with respondents younger than 30 years old), Middle (respondents from the age of 30 till 49 years old) and Old (respondents from 50 years on). It is assumed that the elder the respondents are, an extension of shop opening hours does less connect to their lifestyle because of more available time for shopping or a lack of interest into the subject.
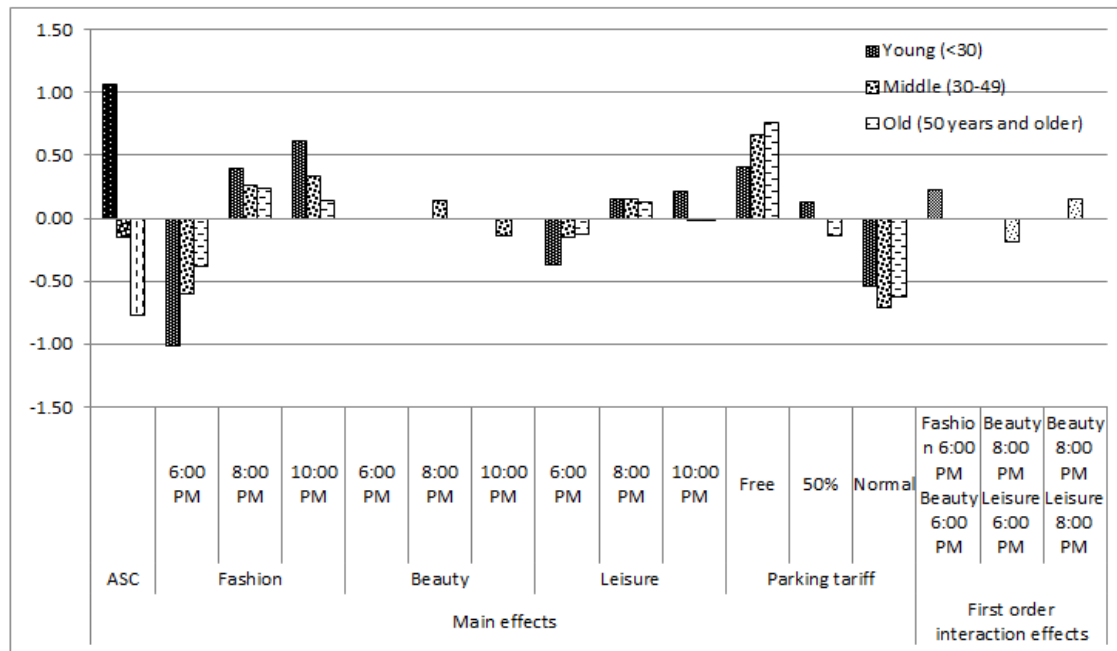
Figure 4.14 Parameter estimation divided for three age groups

Group Young*(229 respondents)* LL_M: -999.92 LL_0: -1257.91 Rho^2: 0.21
Group Middle*(245 respondents)* LL_M: -1232.32 LL_0: -1345.80 Rho^2: 0.08
Group Old*(262 respondents)* LL_M: -1272.49 LL_0: -1439.18 Rho^2: 0.12

As can be concluded from figure 4.14 above, the model performances do increase. Although the middle age group again has a low Rho^2 , the young age group (<30 years old) has a very satisfactory score of 0.21. From the ASC-values becomes clear that the 'young'-group does have a strong opinion on shopping opening hours and chooses for one of the two unlabelled alternatives (ASC of 1.08), the 'old'-group however has less interest in the subject (ASC of -0.77). Regarding fashion opening hours, only for the oldest group 8:00 PM is preferred, by the other two groups 10:00 PM has a higher value. Opening hours for beauty are considered neutral by young and old respondents, for the middle age group 8:00 PM is considered best. Leisure opening hours till 8:00 PM are preferred by age groups middle and old; young prefers 10:00 PM as closing hour. From the parking tariffs, free parking tariffs are highest ranked as expected, although this seems to be more important for the elder respondents than the younger.

The interaction effects as mentioned before, are here divided over two age groups, in the young age group a positive interaction effect for both Fashion and Beauty opening hours till 6:00 PM can be seen. In the middle age group interactions between Beauty and Leisure do appear (Beauty till 8:00 PM and Leisure 6:00 PM; Beauty 8:00 PM and Leisure 8:00 PM). The following figures (4.15 and 4.16) show the effects of these interaction effects on the partial utilities of the combined opening hours of the two types of shops, first for Fashion and Beauty, second for Beauty and Leisure.
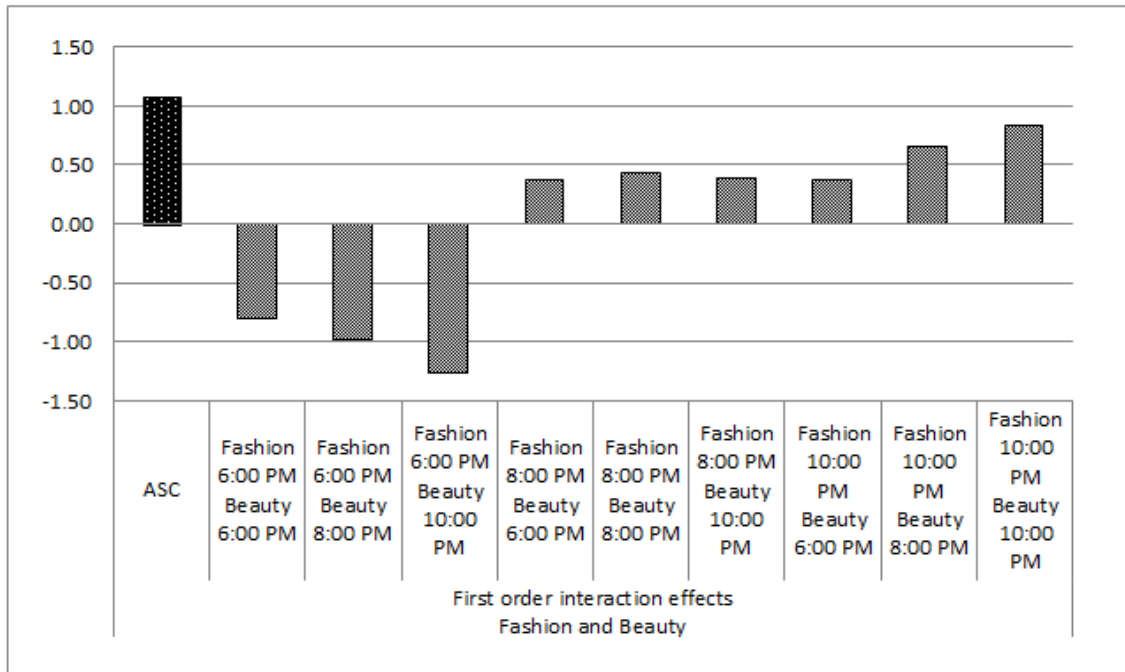
Figure 4.15 Interaction effects group young

As can be concluded from figure 4.15 above, the highest utility is gained when both fashion- and beauty shops close at 10:00 PM. The partial utility of this combined attribute levels is 0.84, which is a higher value than the two separate values for fashion- and beauty shop opening hours till 10:00 PM, 0.62 summed with 0.00 is 0.62.
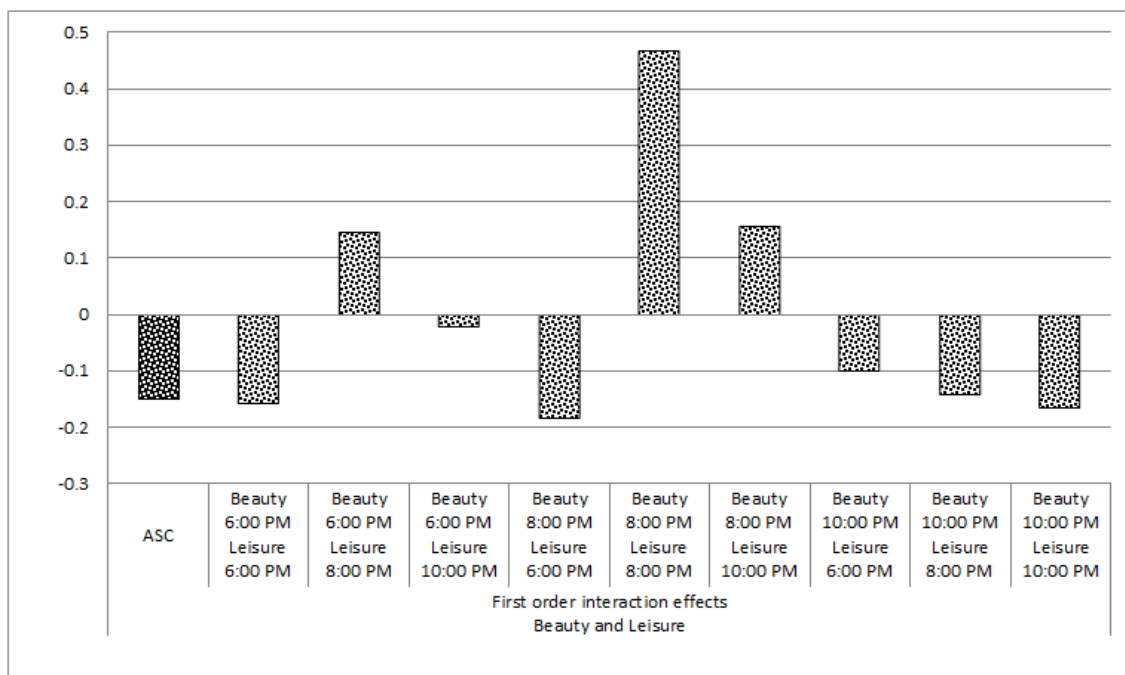
Figure 4.16 Interaction effects group middle

From the interaction effects shown in figure 4.16 it becomes clear that for the middle age group an optimal combination is achieved when both beauty and leisure shops are opened

36

till 8:00 PM. The utility value is certainly higher than for both shop-types apart, 0.47 versus 0.31.

Model application

From the calculated parameter values, consumer preferences for particular situations can be computed. Here a hypothetical city centre A is introduced. The structural utilities (V_i's) and probabilities (P_i's) a respondent younger than 30 (age group young) will choose for a specific situation (1 till 6) compared to the basic situation are shown in table 4.1.

**Table 4.1 MNL model application**

		City centre A						
		Basic situation	Situation 1	Situation 2	Situation 3	Situation 4	Situation 5	Situation 6
Opening hours	Fashion	6:00 PM	8:00 PM	8:00 PM	8:00 PM	10:00 PM	10:00 PM	10:00 PM
	Beauty	6:00 PM	8:00 PM	8:00 PM	8:00 PM	10:00 PM	10:00 PM	10:00 PM
	Leisure	6:00 PM	8:00 PM	8:00 PM	8:00 PM	10:00 PM	10:00 PM	10:00 PM
Parking tariff (after 6:00 PM)		Normal	Normal	50%	Free	Normal	50%	Free
Structural utility (Vi)		-0.62	1.09	1.76	2.04	1.61	2.27	2.55
Probability (Pi)			0.85	0.92	0.93	0.90	0.95	0.96

From the table above, it becomes clear that for a hypothetical city centre A the probability that a respondent will choose for extended opening hours till 8:00 PM instead of current opening hours (till 6:00 PM) is 85%. This means that 85% of the respondents under 30 years old prefers the extended opening hours above the current situation. When the current situation is compared to the 'best situation', situation 6 with attribute levels with highest utilities from the estimation model, 96% of respondents prefers this scenario, although it becomes clear that already 93% of respondents has a preference for situation 3 (opening hours extended with two hours compared to 'current situation'). As already became clear from the MNL model the range between opening hour level 1 (6:00 PM) and level 2 (8:00 PM) is larger than between level 2 and level 3 (10:00 PM), both for fashion and leisure type of shops and therefore respondents are more sensitive to an extension from 6:00 PM till 8:00 PM than to an extension from 6:00 PM till 8:00 PM. The same applies to the range between normal parking tariff and 50%, which is larger, compared to the range between 50% and free parking. Opening hours of beauty shops do not have an influence as can be concluded from non-significant parameters as already became clear from the bar-figure 4.14 above.

From the MNL model, information is gained which situation respondents prefer above another, in this case the basic situation (opening hours till 6:00 PM; normal parking tariff); the influence of opening hours and parking tariffs on choice are determined. Because the MNL model does not contain information about how opening hours influence shopping behaviour, the second part of the sub-question *'What are ideal opening hours and how would these opening hours influence consumer behaviour?'*, will be answered with the help of Binary Logistic Regression modelling.

4.3.2 Changes in shopping behaviour

In order to investigate (changes in) shopping behaviour binary logistic regression models are estimated. Shopping behaviour is expressed by three variables: shopping on a later time of the day, for a longer time period, and with a higher visit frequency. First, in a basic model the three variables are predicted by opening hours and parking tariff. Then demographic aspects (age, gender and occupation) are added in a second model. By Backward (Wald)

method parameters are estimated and insight is gained in which variables influence shopping behaviour, and what the effects are.

Dummy coding is applied to represent the attribute levels and the following equations are used to calculate the utilities for the opening hours of shops in the categories fashion and luxury; beauty; and media and leisure:

6:00 pm $(1 \times \beta_{FASHION1}) + (0 \times \beta_{FASHION2})$*
8:00 pm $(0 \times \beta_{FASHION1}) + (1 \times \beta_{FASHION2})$
10:00 pm $(0 \times \beta_{FASHION1}) + (0 \times \beta_{FASHION2})$

Concerning the parking tariff the following formulas have to be calculated:

Free $(1 \times \beta_{PTARIFF1}) + (0 \times \beta_{PTARIFF2})$
50% discount $(0 \times \beta_{PTARIFF1}) + (1 \times \beta_{PTARIFF2})$
Normal $(0 \times \beta_{PTARIFF1}) + (0 \times \beta_{PTARIFF2})$

* For the part-worth utilities for beauty- and media and leisure-shops respectively the coefficients of $\beta_{BEAUTY1}$ and $\beta_{BEAUTY2}$ and $\beta_{LEISURE1}$ and $\beta_{LEISURE2}$ will be used.

In the table below the parameter values are shown:

Table 4.2 Parameter estimation of Binary Logistic Regression

		Basic BLR						BLR demographic variables					
		Later		Longer		Often		Later		Longer		Often	
Variables		Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
Opening hours	FASHION1	-0.735	0.00	-0.468	0.00	-0.299	0.03	-0.755	0.00	-0.492	0.00	-0.316	0.02
	FASHION2	-0.167	0.21*	-0.096	0.45*	-0.035	0.79*	-0.184	0.17*	-0.108	0.41*	-0.053	0.68*
	BEAUTY1	-0.337	0.01	-0.333	0.01			-0.303	0.03	-0.322	0.02		
	BEAUTY2	-0.111	0.39*	-0.031	0.81*			-0.103	0.43*	-0.019	0.89*		
	LEISURE1	-0.421	0.00	-0.343	0.01			-0.387	0.01	-0.314	0.02		
	LEISURE2	-0.199	0.13*	-0.131	0.31*			-0.175	0.19*	-0.113	0.38*		
Parking tariff (after 6:00 PM)	PTARIFF1	0.370	0.01					0.394	0.00				
	PTARIFF2	0.249	0.05					0.303	0.02				
Age	< 30 years											0.506	0.00
	30-49 years											0.385	0.00
Gender	Female									0.516	0.00	0.359	0.00
Employment	Fulltime							0.758	0.00	0.29	0.05		
	Part-time							0.851	0.00	0.328	0.04		
	Student							1.176	0.00	0.331	0.05		
ASC		0.758	0.00	0.067	0.62**	-0.388	0.00	0.075	0.69**	-0.492	0.01	-0.889	0.00
Log likelihood ratio statistic		1943. 232		1965.040		1945.867		1886.177		1935.697		1917.243	
Pseudo R²			0.052		0.022		0.005		0.102		0.048		0.032

* non-significant parameters are not removed because the significant influence of the attribute as such according to the Wald-criterion
** parameters removed because of non-significance

Two models are estimated as shown in table 4.2 above. Although the model predictions are low (Pseudo R^2 < 0.100) there are significant parameters and therefore the models give valuable information. In general, the larger the coefficient value, the higher the influence on changes in shopping behaviour. Here the opening hours of fashion shops are more influential concerning shopping behaviour adaptations than changes in opening hours of beauty and leisure shops.

From both basic binary logistic regression models, it becomes clear that a lower parking tariff stimulates shopping at a later time of the day with the highest parameter value (0.370) for free parking, although the effect of 50% discount (0.249) is relatively larger compared to

a normal parking tariff (0.00). Opening hours of fashion shops do influence all three shopping behaviour aspects with a relatively larger influence of opening hours till 8:00 PM (concluded from the range between 6:00 PM and 8:00 PM which is larger as opposed to the range between 8:00 PM and 10:00 PM). By extending opening hours of fashion, beauty and leisure shops consumers tend to shop later and will stay longer in the city centre as can be concluded from the coefficients magnitudes. When it comes to demographical aspects, occupation influences later and longer shopping behaviour, gender influences longer and more often visits and age only has influence on the visit quantity. As concluded from the MNL model, here also the younger the respondents, the higher the influence on the visit frequency. Besides, females tend to stay longer and visit the downtown area more often. Fulltime employees, part-timers and students do have a higher utility concerning shopping later and longer than the non-employed.

Model application
From the calculated parameter values, consumer preferences for particular situations can be computed. Here the same hypothetical city centre A as with the MNL model is introduced. The structural utilities (V_i's) and probabilities (P_i's) for Yes: a respondent may visit the city centre later, longer or more frequent for a specific situation (1 till 6), are calculated and shown in table 4.3.

Table 4.3 BLR model application

			City centre A					
			Situation 1	Situation 2	Situation 3	Situation 4	Situation 5	Situation 6
Predictor variables	Opening hours	Fashion	8:00 PM	8:00 PM	8:00 PM	10:00 PM	10:00 PM	10:00 PM
		Beauty	8:00 PM	8:00 PM	8:00 PM	10:00 PM	10:00 PM	10:00 PM
		Leisure	8:00 PM	8:00 PM	8:00 PM	10:00 PM	10:00 PM	10:00 PM
	Parking tariff (after 6:00 PM)		Normal	50%	Free	Normal	50%	Free
Predicted variables	Later	Structural utility (Vi)	0.28	0.53	0.65	0.76	1.01	1.13
		Probability (Pi)	0.57	0.63	0.66	0.68	0.73	0.76
	Longer	Structural utility (Vi)	-0.26			0.00		
		Probability (Pi)	0.44			0.50		
	Often	Structural utility (Vi)	-0.42			-0.39		
		Probability (Pi)	0.40			0.40		

Where the MNL model obtained information about preferences between two situations (a basic situation and a new situation), the BLR model gives information about shopping behaviour preferences and changes by introducing new situations. Here the choice to shop later, longer or more often is compared to the choice to not shop later, longer or more often; the choice is not which situation is preferred over another. The basic situation (all shop opening hours till 6:00 PM and a normal parking tariff) is not presented literally to respondents in the questionnaire and therefore not calculated here.

When a shopping centre manager/the authorities of a specific city centre A decides to extend opening hours of all types of shops till 8:00 PM and reduces the parking tariff with 50% the probability that the city centre is visited on a later time during the day is 63%. This means that 63% of the consumers may visit the city centre on a later time the day although it is not known which time. When the authorities of the same city centre A/the same shopping centre manager decides to extend opening hours of all types of shops till 10:00 PM and decides to move on to free parking tariffs 76% of the consumers may visit the city centre later, also 50% may stay longer and 40% may shop more often.

Shopping frequency and duration are insensitive to parking tariff as did already become clear from table 4.2; here is shown that the probabilities respondents will shop longer and more often do therefore not increase by decreasing parking tariffs.

Although calculated with the same opening hours for all types of shops, it is also possible to only extend opening hours for one type of shops and predict influences on shopping behaviour. Because of the highest influence of fashion opening hours, an extension of fashion opening hours will be calculated here in table 4.4:

Table 4.4 BLR model application

			City centre A					
			Situation 1	Situation 2	Situation 3	Situation 4	Situation 5	Situation 6
Predictor variables	Opening hours	Fashion	8:00 PM	10:00 PM	8:00 PM	10:00 PM	8:00 PM	10:00 PM
		Beauty	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM
		Leisure	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM
	Parking tariff (after 6:00 PM)		Normal	Normal	50%	50%	Free	Free
Predicted variables	Later	Structural utility (Vi)	-0.17	0.00	0.08	0.25	0.20	0.37
		Probability (Pi)	0.46	0.50	0.52	0.56	0.55	0.59
	Longer	Structural utility (Vi)	-0.77	-0.68	-0.77	-0.68	-0.77	-0.68
		Probability (Pi)	0.32	0.34	0.32	0.34	0.32	0.34
	Often	Structural utility (Vi)	-0.42	-0.39	-0.42	-0.39	-0.42	-0.39
		Probability (Pi)	0.40	0.40	0.40	0.40	0.40	0.40

As can be concluded from the table 4.4, an extension of opening hours of fashion shops till 10:00 PM and free parking tariffs will result in a higher probability (59%) consumers that may visit the city centre later than extending opening hours of all types of shops by two hours with a normal parking tariff (57%). Less consumers will stay longer if only fashion stores open up their shops as compared to opening up all types of shops. Because fashion shops are the only predicting variables in terms of shopping frequency the outcomes for the 'often'-variable from table 4.4 do not diverge from the outcomes from table 4.3.

4.4 Combined results

In paragraph 4.2 it is shown that most of the respondents indicated that they went shopping in the inner city centre between four and twelve times last year. As can be concluded from the BLR analysis, age and gender are determining factors in visiting the city centre more often. By an extension of fashion opening hours younger respondents will visit the city centre more often than older respondents, and also females tend to visit the downtown area more often. This is in line with the current visit frequency which is significantly related to age and gender. In figures 4.17 and 4.18 it is shown that younger respondents shop more frequent then the older respondents, although the highest percentage of weekly visitors is gained by the oldest respondents; women shop more frequent than men.
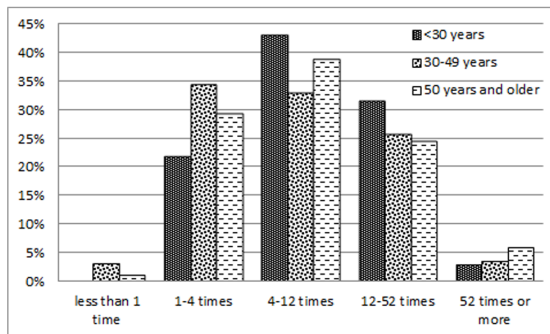
Figure 4.17 Visit frequency and age
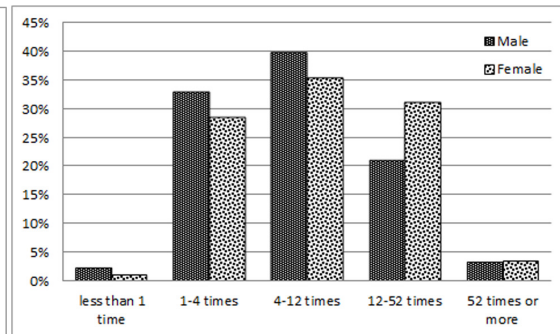Chi^2: 32.867 Sig. 0.035

Figure 4.18 Visit frequency and gender
Chi^2: 10.313 Sig. 0.035

In general, weekend-days and the shopping night are most popular moments for shopping. In line with the MNL analysis, differences in age do become clear in appendix 7, showing preferred shopping days and times. The MNL analysis showed that younger respondents are more sensitive to opening hours and prefer 10:00 PM as closing time. An ideal situation will be gained when all shops are open until 10:00 PM: 90% of the young respondents prefers this situation above the current situation in which shops are opened until 6:00 PM. Meanwhile, older respondents value parking tariffs higher, they visit the shopping centre mostly by car as shown in figure 4.19 below.
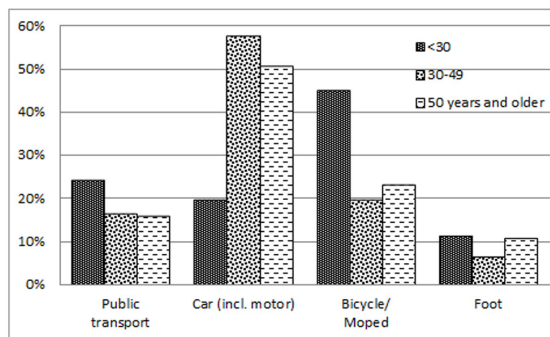

Figure 4.19 Mode of transport and age
Chi^2: 100.514 Sig. 0.000
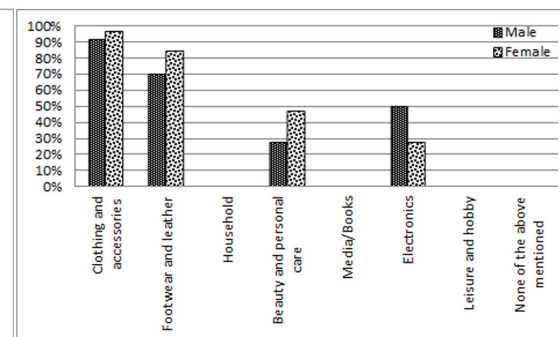
Figure 4.20 Product category and gender
Chi^2: 9.390/20.919/27.921/37.387 Sig. 0.002/0.000 x3

An average visit takes between one and two hours, where females spent significantly more time shopping than males, and part-time employees and unemployed longer than fulltime workers, students and pensioners (see figures 4.21 and 4.22 below). Females also tend to shop longer compared to men, when shop opening hours are extended.

Figure 4.21 Time spent and gender
Chi^2: 24.100 Sig. 0.000

Figure 4.22 Time spent and employment
Chi^2: 23.178 Sig. 0.109

41

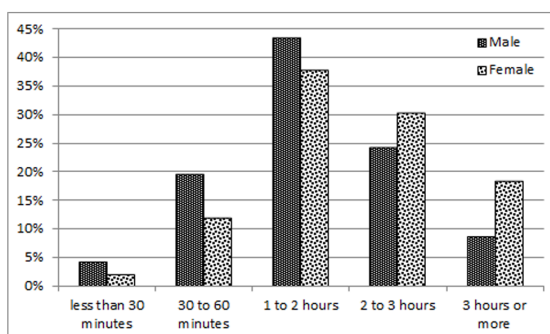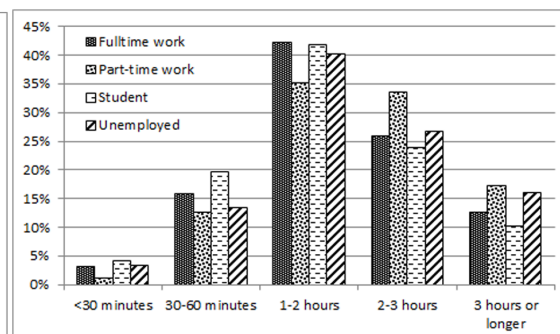The city centre is mainly visited for clothing and accessories, footwear and leather. Females visit the city centre more often for clothing, shoes and personal care, males outshine females when it comes to electronic goods (see figure 4.20).

4.5 Conclusion

By analysing and combining the results of the different parts of the questionnaire, research questions will be answered and conclusions will be drawn here.

Considering the sub-questions *'What is typical shopping behaviour of visitors in inner city areas of medium sized Dutch cities?'* and *'What are ideal opening hours and parking tariffs, and how would these opening hours and parking tariffs influence consumer behaviour?'* the following aspects are noticed. Most of the respondents visit the city centre between once a month and once per quarter; where younger respondents shop more frequent then elder and women shop more frequent than men. Weekend-days and the shopping night are most popular moments for shopping. The city centre is mostly visited from home, by car and an average visit takes between one and two hours where part-time employees and unemployed shop longer than fulltime workers, students and pensioners. Also females stay longer and visit the city centre more often for fun than males; a higher percentage of males visits the city centre always for efficiency reasons. Regarding opening hours, respondents in general do not have a clear opinion on opening hours and parking tariffs, also respondents are neutral towards opening hours of beauty shops. When the dataset is defined by age, more detailed insights are gained. For the youngest group (respondents below 30 years), fashion opening hours are most important. An ideal situation will be gained when all shops are open till 10:00 PM. However, the range between opening hour utilities for 6:00 PM and 8:00 PM is larger as compared to the range between 8:00 PM and 10:00 PM. Meanwhile, respondents above 30 years value parking tariffs higher, probably because they visit the shopping centre more by car than younger respondents. In terms of type of shops or product categories: clothing and accessories, footwear and leather are the most popular products shopped for in inner city centres. From here, it follows logically that preferences for specific types of shops concerning extended opening hours do exist as asked by the main research question: *'How do extended opening hours of different types of retail facilities in medium-sized city central shopping areas influence consumer behaviour, and what role do parking tariffs play in this context?'*

An extension in opening hours of one of the three types of retail facilities (fashion, beauty and leisure) do all influence consumer shopping behaviour in terms of shopping later and shopping longer, with a relatively large influence of opening hours till 8:00 PM. Besides, occupation has effect on those aspects and shopping longer is also dependent on gender. Thereby, gender has an influence on visit frequency. In terms of opening hours, only fashion shops do affect visit frequency; later opening hours result in a higher probability that consumers will shop more often. This finding especially applies to young people (age <30 years) and females (gender) tend to visit the city centre more often, although the difference between 8:00 PM and 10:00 PM is negligible. Parking tariffs might influence consumers to visit the city centre on a later moment during the day, whereby 50% discount results in a relatively higher percentage of visitors shopping later.

5. CONCLUSION

In this part of the report first a general conclusion is drawn. Thereafter, attention is paid to the influences of extended opening hours for the involved stakeholders resulting in an advice. At last, discussion and recommendations are paid attention to.

5.1 General conclusion

In the Netherlands, since July 2013 new national legislation ensures exemption regarding Sunday openings of retail facilities. With the recently introduced regulation, attention to the opening hours of the current saturated, and by vacancy threatened, retail landscape, is shown. There is need for a service economy no longer bounded to the nine-to-five norm (Taskforce Deeltijdplus, 2010). For retailers, it is important to deliver value and satisfy people-based needs to gain a stronger position and to strengthen the competitiveness towards internet shopping. A questionnaire including a stated choice experiment is distributed to gain insight into current consumer shopping behaviour and (changes in) behaviour regarding shop opening hours and parking tariffs. Respondents are gained from Panelclix and by snowballing; data is analysed using MNL models and binary logistic regression.

Concerning shopping behaviour in medium-sized city central areas, it becomes clear that the city centre is mostly visited from home, by car. An average visit takes between one and two hours and most of the respondents visit the city centre between once a month and once per quarter with weekend-days and the shopping night as most popular moments for shopping. The city centre is visited for both enjoyment (more by females) and efficiency reasons confirming what Bellenger & Korgaonkar (1980) already found. In terms of type of shops or product categories: clothing and accessories, footwear and leather are the most popular products shopped for in inner city centres.

Regarding preferred opening hours, in general respondents do not have a solid opinion on opening hours and parking tariffs. Although there are differences between age groups, where especially young respondents do have a strong opinion, affirming the research of Cauter-de Jonge (2013). As can be concluded from the stated choice experiment, stores will gain a greater attractiveness when opening hours are extended from 6:00 PM to 8:00 PM or 10:00 PM. Whereby 10:00 PM is mostly preferred by respondents below 30 years; respondents from 30 years and above prefer opening hours until 8:00 PM. Especially stores in the fashion and luxury segment are influential concerning preferred choice. Also, shops in the leisure segment are sensitive to an extension. Although for the elder visitors parking tariff is the main trigger to visit a city centre in the evening hours.

When opening hours are shifted, consumer shopping behaviour will change. At least for some specific demographic groups. For example the fulltime workers and students are able to visit a city centre on another day than weekends and the shopping night; they have preferences to visit the city centre on other evenings and an extension of opening hours may influence them to shop later and longer than in the current situation. Age is an important demographical factor, especially for the young age group extending opening hours of fashion shops seems an interesting option to strengthen the competitiveness of medium-sized inner city retail areas; they may visit the city centre more often. The elder age groups prefer to shop more often in mornings and afternoons instead of evenings.

Therefore extended opening hours will not have significant impact on their shopping behaviour. Also gender does have an influence on shopping behaviour and possibly changes in shopping behaviour, especially women are more sensitive to shopping longer and more often after opening hour extensions.

Now it becomes clear that an extension of opening hours seems an interesting first measure influencing consumer shopping behaviour and increasing the (medium-sized) city centre's retail vitality, a stakeholder advice will be provided.

5.2 Stakeholder advice
Stakeholders discussed are the resident, the retailer, the investment company, the infra-manager, the municipality and owners of leisure facilities and restaurants.

The inner city resident
Especially for inner city residents changes will occur when opening hours will be extended because of the extra visitor nuisance; the bustle in main shopping streets and secondary retail streets, and also increased parking space pressure. However, only the young group is interested in opening hours till 10:00 PM, elder prefer 8:00 PM as closing hour. Therefore bustle may be limited and residents also have the advantages of shops in their neighbourhood opened up in evenings, resulting in a more vital and liveable environment.

The retailer
As investigated with this research, an extension of retail opening hours will stimulate consumers to shop on a later moment of the day, to shop longer and more often than they do now. This may result in more customers; ATCM (in HBD, 2011) already found that the sales volume in evening hours is 50% larger than on early hours of the day. However, additional fixed costs will increase and suppress the profitability; bigger shops and chain stores have advantages over smaller stores because of their flexibility in hiring personnel for example, although personnel needs to be convinced to work in evening hours, possibly for higher wages (Hardeman & Alberda, 2012). When it becomes possible to keep the extra fixed costs the same as during other periods of the day, it becomes more attractive for retailers to open up their stores during evening hours. Already in 2002 Kosfeld investigated for Germany that the problem with hiring or convincing personnel is difficult. For smaller stores it will become more attractive when use is made of economies of scale, for example by cooperative marketing and advertisement strategies to appropriately inform the consumer. Retailers also have to cooperate in case of adjusting opening hours of all shops in a retail area (Raatgever, 2014).

The investment company
When shops become more profitable by an opening hour extension, this may lead to increased resistance towards bankruptcy and, interesting for investment companies: Decreased vacancy and thus, higher incomes from rent. Also the building stock will be used more effectively by opening up stores during the night, optimizing the cities' economy. Resulting in a more sustainable and profitable investment climate (Van Assendelft & Partners bv, 2013). Therefore it is interesting for investment companies to stimulate

retailers to extend their opening hours, a possibility might be to oblige retailers by the rental agreement.

The infra-manager

A combination of extended opening hours of shops, adapted opening hours of leisure facilities and lower parking tariffs can on the one hand result in extra infrastructural pressure and congestion for the inner city road network and parking facilities in the end of the afternoon; where the car is the most popular transport mode. On the other hand, infrastructure can be used more efficiently in case of multi-purpose trips, for example (Van Assendelft & Partners bv, 2013). With regard to parking facilities, which are also suffering from vacancy and empty spaces (an increase of 25% between 2008 and 2012), reduced parking tariffs are preferred (Brock, 2013). Besides, lower parking tariffs stimulate shopping on a later time the day. Five to six per cent of the respondents may shop later when the parking tariff is reduced with 50%, another 3% respondents is gained when parking becomes free. This increase in parking demand during evening hours may result in a decrease of vacant spaces; increased liveability and profitability of parking facilities and their environments. However, a lower parking tariff may not be beneficial for parking companies. When this is the case, a municipality may stimulate parking tariff reductions by providing subsidies or adapting regulations.

The municipality

The vitality of the living environment is in the interest of the municipality. In this case, municipalities have a role in stimulating an integral approach towards the main cities' shopping area. Consumer behaviour is an influential factor in determining effective management. In this case, the consumer is interested in extended opening hours and therefore it is important to develop an integral plan for making the shopping area more attractive. Think about building quality, retail offer, public space, events and city marketing, but also mobility will play an important role, a city-manager can play a significant role here in stimulating retailers and property owners (Brady, 2014). Leask (2010) states that collaboration between all stakeholders is a "fundamental ingredient in a sustained development effort." According to Expertteam Detailhandel Noord-Brabant (2013), an integral view on retail structure helps in making choices by both market- and governmental parties. In order to tackle the retail vacancy problem, a multi-stakeholder approach is an essential aspect in determining a strategy to create a new economical playing area for a city centre. Marketing management including communications towards consumers is seen as an effective way to increase inner city centre popularity; collaboration will have advantages because of joint marketing and will also help in overcoming industry fragmentation in new approaches for urban areas as "complex institutional arenas" (Janssen, 2011).

Owners of leisure facilities

Advantages for restaurants because shoppers tend to combine their visit more often with a dinner outside. Consequence is that kitchens should be opened up till a later time, this may be later than now because kitchens close mainly between 9:30 and 10:00 PM. Owners of leisure facilities and shops may think about common advertisement campaigns with for examples coupons to stimulate the in popularity growing total retail experience for consumers (Molenaar, 2011).

5.3 Discussions and recommendations

An extension of opening hours in evenings and a lowering of parking tariffs is an interesting first step in improving the inner city retail areas' attractiveness and strengthen the competitiveness towards internet shopping and subsequently retail vacancy, although it will not solve the entire retail vacancy problem the Netherlands is confronted with currently. The Netherlands has one of the most advanced retail markets from Europe; is totally saturated; and as predicted about 7% of retail surface will be disappeared by 2020 already (Booz & Company, 2013). A function-transformation might be interesting to investigate shopping locations with the lowest rate of passers-by. However, with an opening hour extension (combined with a reduction of parking tariffs) as a first measure, the remaining retail surface may become more viable and profitable. Also the Omni channel concept will, by combining internet shopping with shopping in physical stores, be better elaborated upon providing chances for offline retailers and satisfying customers' needs.

From this research it becomes clear that the demand side (the consumer) is positively influenced by evening shopping possibilities, although it is not known what this means for the supply side. Consumers may shop later, longer and more often, but do they spend more? Will it be cost effective for retailers, investment companies and leisure facility owners when opening hours are extended? The same applies for parking companies and infrastructure managers in terms of reduced parking tariffs. It might be interesting to investigate this economic side to know what the exact value of the measures will be.

Another aspect will be the difference between an opening hour extension or a shift in opening hours. This research focussed on an opening hour extension, although it might be more profitable for retailers to shift opening hours to a later moment the day (ATCM, cited in HBD, 2011). By being open fewer hours a day, a larger revenue might be gained. Also seasonal weather patterns might have influence on shopping behaviour (Landry, 2000). This research is performed in the winter and it might be plausible that consumers respond differently during summer. The same applies to days of the week. From this research it becomes clear that respondents below 50 almost every day prefer evening opening hours above morning and afternoon, except for weekend-days: afternoons are preferred. Mornings are popular by the elder ones. However, it is not known in what way shopping behaviour will be influenced regarding different days during the week.

Opening hour preferences are now investigated in general and for specific age groups, although occupation seems to be a more influential factor in changing shopping behaviour by extended opening hours. Therefore it might be interesting to investigate opening hour preferences for specific occupation groups. There might also might be other demographical factors than occupation, age and gender influencing changes in shopping behaviour. For example the family composition. By applying Latent Class Modelling, different groups will be formed automatically, possibly resulting in higher model performances than gained in this research. It is also not known if the research sample is representative in this research because of a lack in data about shopping public in the investigated cities or city centres in general. Therefore it was not possible to verify the representativeness of the research sample.

With the generated dataset in this research, it is possible to gain a more profound view on changes in shopping behaviour after an opening hour extension. For example, if opening hours have an effect on whether or not to combine a shopping trip with other leisure facilities. Changes in used transport mode can be investigated, if consumers shop more for enjoyment or efficiency with an opening hour extension, in company or alone, etcetera. It is also interesting to search for differences between cities and give a more detailed advice to the distinct cities investigated. Besides, there might be a difference between city sizes in general. Although this research is carried out on city centre level, it could also be extended to the supporting centre level mainly used for daily needs.

REFERENCES

ABN Amro. (2014, May 08). Ruimte voor groei retailsector in 2014. *ABNAmro.com.* Retrieved June 19, 2014, from http://www.abnamro.com/nl/newsroom/nieuws/Ruimte-voor-groei-retailsector-in-2014.html

Arentze, T.A., & Timmermans, H.J.P. (2001). Deriving performance indicators from models of multipurpose shopping behaviour [Electronic version]. *Journal of Retailing and Consumer Services, 8,* pp. 325-334.

Assendelft, van & Partners BV. (2013). Onderzoek naar de toeristische herpositionering van Het Rijk van Nijmegen. Retrieved June 19, 2014, from http://www.rbtkan.nl/media/92110/toeristische%20herpositionering%20rijk%20van%20nijmegen.pdf

Babin, B.J., Darden, W.R., & Griffin, M. (1994). Work and/or Fun: Measuring Hedonic and Utilitarian Shopping Value [Electronic version]. *Journal of Consumer Research, 20,* pp. 644-656.

Bäckström, K. (2011). "Shopping as leisure: An exploration of manifoldness and dynamics in consumer shopping experiences" [Electronic version]. *Journal of Retailing and Consumer Services, 18,* pp. 200-209.

Barata-Salgueiro, T., & Erkip, F. (2014). Retail planning and urban resilience – An introduction to the special issue [Electronic version]. *Cities, 36,* pp. 107-111.

Batra, R., & Ahtola, O.T. (1990). Measuring the Hedonic and Utilitarian Sources of Consumer Attitudes [Electronic version]. *Marketing Letters, 2,* pp. 159-170.

Beentjes, S. (2013). Detailhandel Haarlem toekomstbestendig? Een onderzoek naar de mogelijke kansen en bedreigingen voor de detailhandel van Haarlem bij de komst van een Factory Outlet Centre in Halfweg. Utrecht: Universiteit van Utrecht.

Bellenger, D.N., & Korgaonkar, P.K. (1980). Profiling the Recreational Shopper [Electronic version]. *Journal of retailing, 56,* pp. 77-92.

Ben-Akiva, M. & S.R. Lerman (1991), *Discrete choice analysis: theory and application in travel demand*. London: MIT Press.

Blaauwberg. (2013). *Zondag concurrentiedag. Winkeltijden en de positie van de "kleine winkelier".* Retrieved June 19, 2014 from http://www.blaauwberg.nl/index.php?id=1006&action=send_media&media_id=67&projecten_id=20&modules_name=projecten

Booz and Company. (2013, April 16). *Twee miljoen vierkante meter winkeloppervlak weg.* Retrieved May 23, 2013, from http://www.nu.nl/economie/3398865/twee-miljoen-vierkante-meter-winkeloppervlak-weg.html

Brady, R.P. (2014, April). 'Hoe repareer je een hoofdwinkelstraat?'*. Platform binnenstadsmanagement.* Retrieved June 22, 2014 from http://binnenstadsmanagement.org/blog/hoe-repareer-je-een-hoofdwinkelstraat-door-rupert-parker-brady?jaar=2014&maand=4

Brock, T. (2013, November). Parkeergarages in de steden trekken minder bezoekers. *De Volkskrant.* Retrieved June 22, 2014 from file:///D:/Downloads/Vk%2023%2011%2013%20parkeergrages.pdf

Cauter – de Jonge, C. van. (2013). *Trend Presentatie 2013. Consumer & Shopper Insights.* Retrieved October 26, 2013, from http://www.slideshare.net/cindyvancauter/quotus-research-trend-presentatie-2013

Centraal Bureau voor de Statistiek. (2014). Bevolking; ontwikkeling in gemeenten met 100.000 of meer inwoners. *Statline.cbs.nl.* Retrieved June 19, 2014, from http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=70748NED&D1=0%2c2%2c4%2c16%2c18%2c20%2c22%2c24&D2=a&D3=0&D4=a&D5=l&HD=090707-1905&HDR=T&STB=G4%2cG2%2cG1%2cG3

CBW-MITEX. (2010). *Re'structure Onderzoek Retail2020.* Retrieved October 2, 2013, from http://www.hbd.nl/websites/hbd2009/files/Mode/Retail-2020-rapport.pdf

Chiang, K-P. (2001). Effects of price, producttype and convenience on consumer intention to shop online [Electronic version]. *In Ram Krishnan and Madhu Viswanathan (Eds.), Proceedings of AMA Winter Educators' Conference, 12,* pp. 163-169.

Coleman, J.S. (1958-1959). Relational Analysis: The Study of Social Organizations with Survey Methods [Electronic version]. *Human Organization, 17,* pp. 28–36.

Dellaert, B.G.C., Arentze, T.A., & Timmermans, H.J.P. (2008). Shopping context and consumers' mental representation of complex shopping trip decision problems [Electronic version]. *Journal of Retailing, 84,* pp. 219-232.

Detailhandel Nederland. (2013). *Winkeliers: "Proviniciale regie detailhandel nodig!".* Retrieved June 19, 2014, from http://www.detailhandel.nl/images/pdf/012_Winkeliers_-_Provinciale_regie_detailhandel_nodig.pdf

Diep, V.C.S., & Sweeney, J.C. (2008). Shopping trip value: Do stores and products matter? [Electronic version]. *Journal of Retailing and Consumer Services, 15,* pp. 399-409.

Dijkgraaf, E., & R.H.J.M. Gradus (2004). *Explaining Sunday shop policies.* Rotterdam: ODFEB.

Engbers, S. (2012). Kennisatelier Het Nieuwe Winkelen: Hoe nieuwe winkelconcepten onze steden veranderen. Nicis Institute and Nirov.

Evers, D. (2011). *Detailhandel en beleid: een continue wisselwerking.* Retrieved October 7, 2013, from
http://www.pbl.nl/sites/default/files/cms/publicaties/Detailhandel%20en%20beleid%20defi
nitief%200711_0.pdf

Evers, D., A. van Hoorn & F. van Oort (2005), *Winkelen in Megaland*. Rotterdam/Den Haag: NAi Uitgevers/Ruimtelijk Planbureau.

Expertteam Detailhandel Noord-Brabant. (2013). *Ambitie vereist keuzes.* Retrieved September 20, 2013, from http://www.ivbn.nl/viewer/file.aspx?FileInfoID=599

Finn, A., & Louviere, J.J. (1990). Shopping-Center Patronage Models [Electronic version]. *Journal of Business Research, 21,* pp. 259-275.

Geiger, S. (2006). Exploring night-time grocery shopping behaviour [Electronic version]. *Journal of Retailing and Consumer Services, 14,* pp. 24-34.

Gemeente Helmond. (2013). Detailhandelsbeleid 2013. Helmond: Gemeente Helmond.

Goodman, L.A. (1961). Snowball Sampling [Electronic version]. *Annals of Mathematical Statistics, 32,* pp.148–170.

Goudappel Coffeng. (2014). *Herontwikkeling Antwerpsestraat/Tervoplein Putte.* Retrieved June 19, 2014, from
http://www.woensdrecht.nl/document.php?m=1&fileid=75845&f=175c02e082896c08c9a3
e97f1badd80a&attachment=1&c=85708

Guy, C.M. (1998). Classification of retail stores and shopping centres: some methodological issues [Electronic version]. *GeoJournal, 45,* pp. 255-264.

Hardeman, E., & Alberda, A-P. (2012). Grotere winkels en lagere personeelskosten bij succesvolle bedrijven. *CBS.nl.* Retrieved June 22, 2014, from http://www.cbs.nl/nl-NL/menu/themas/handel-horeca/publicaties/artikelen/archief/2012/2012-succesvol-detailhandel-2009-art.htm

Hensher, D.A. (1994). Stated preference analysis of travel choices: the state of practice [Electronic version]. *Transportation, 21,* pp. 107-133.

Hensher, D.A., J.M. Rose & W.H. Greene (2005), *Applied Choice Analysis. A Primer.* Retrieved from http://www.CambridgeEbook.com

Hoofdbedrijfschap Detailhandel. (2011). *Het nieuwe winkelen.* Retrieved October 25, 2013, from http://www.hbd.nl/websites/hbd2009/files/Technologie/Rapport-HBD-het-nieuwe-winkelen.pdf

Hoofdbedrijfschap Detailhandel. (2012). Detailhandel totaal: Aantal winkels per gemeente. *Detailhandel.info.* Retrieved June 19, 2014, from http://www.hbd.nl/pages/15/Winkels/Detailhandel-totaal/Aantal-winkels-per-gemeente.html?subonderwerp_id=25

Hsiao, M.-H. (2009). Shopping mode choice: Physical store shopping versus e-shopping [Electronic version]. *Transportation Research Part E, 45,* pp. 86-95.

Huff, D.L. (1964). Defining and Estimating a Trade Area [Electronic version]. *Journal of Marketing, 28,* pp. 34-38.

I&O Reserach. (2011). *11 Randstad Koopstromenonderzoek.* Retrieved May 23, 2013, from http://www.kso2011.nl/LinkClick.aspx?fileticket=stpkWxBG4kA%3D&tabid=93

I&O Research. (2012). *Notitie Onderzoek Verruiming Winkeltijden.* Retrieved January 6, 2014, from https://www.google.nl/#q=Notitie+Onderzoek+Verruiming+Winkeltijden+Gemeente+Haarlemmermeer+November

Janssen, I.I. (2011). Adaptive Decision Making in Multi-Stakeholder Retail Planning. Eindhoven: University of Technology Eindhoven.

Jacobsen, J.P., & Kooreman, P. (2005). Timing constraints and the allocation of time: The effects of changing shopping hours regulations in the Netherlands [Electronic version]. *European Economic Review, 49,* pp. 9-27.

Kamer van Koophandel. (2012). *Winkelleegstand praktisch oplossen.* Retrieved May 23, 2013, from http://www.kvk.nl/download/Factbook%20Winkelleegstand%20praktisch%20oplossen_tcm14-326355.pdf

Kemperman, A.D.A.M. (2000). Temporal Aspects of Theme Park Choice Behaviour. Eindhoven: University of Technology Eindhoven.

Kemperman, A.D.A.M., Borgers, A.W.J., & Timmermans, H.J.P. (2009). Tourist shopping behaviour in a historic downtown area [Electronic version]. *Tourism Management, 30,* 208-218.

Kennisplatform Verkeer en Vervoer. (2013). *Vervoer naar retail.* Retrieved October 31, 2013, from http://www.verkeersnet.nl/10358/vervoer-bereikbaarheid-hebben-weinig-invloed-winkelbezoek/

Kosfeld, M. (2002). Why shops close again: An evolutionary perspective on the deregulation of shopping hours [Electronic version]. *European Economic Review, 46,* pp. 51-72.

Landry, C. (2000). *The creative city: A toolkit for urban innovators*. Earthscan.

Leask, A. (2010). Progress in visitor attraction research: Towards more effective management [Electronic version]. *Tourism management, 31,* pp. 155-166.

Locatus. (2012). Locatus Retail Facts 2012. Woerden: Locatus.

Locatus. (2013). *Aantal verkooppunten naar type winkelgebied en groep in Nederland per 1 mei 2013.* Retrieved January 19, 2014, from http://www.locatus.com/downloads/Verkooppunten%20NL.pdf

Locatus. (2014). *Persbericht – Winkelleegstand stijgt zevende jaar op rij.* Retrieved January, 2014, from http://www.locatus.com/nederland/nieuws-en-informatie/nieuws-en-pers/persbericht---winkelleegstand---jan-2014

Minister van Economische Zaken (2010). *Memorie van antwoord.* Retrieved October 7, 2013, from http://www.rijksoverheid.nl/documenten-en-publicaties/kamerstukken/2010/04/28/wijziging-van-de-winkeltijdenwet-met-het-oog-op-inkadering-van-de-bevoegdheid-om-vrijstelling-te-verlenen-of-een-ontheffingsbevoegdheid-toe-te-kennen-in-verband-met-de-toeristische-aantrekkingskracht-van-een-gemeente.html

Molenaar, C. (2011). *Het einde van winkels? De strijd om de klant.* Den Haag: Sdu Uitgevers bv.

Molenaar, C. (25th of October 2013). *Nieuwsuur.* [Telecasting]. Hilversum: NOS NTR.

NBTC-NIPO. (2011). Kerncijfers over vrije tijd van Nederlanders. ContinuVrijeTijds-Onderzoek 2008-2009.

Nooteboom, B. (1983). Openingstijden en schaaleffecten in de detailhandel [Electronic version]. ESB.

Pen, C.-J. (2012). Kennisatelier Het Nieuwe Winkelen: Hoe nieuwe winkelconcepten onze steden veranderen. Nicis Institute and Nirov.

Planbureau voor de Leefomgeving. (2013). Winkelleegstand groter dan gedacht. *Pbl.nl.* Retrieved June 19, 2014, from http://www.pbl.nl/nieuws/nieuwsberichten/2013/winkelleegstand-groter-dan-gedacht

Raatgever, A. (2014, February). *Winkelgebied van de toekomst. Bouwstenen voor publiek-private samenwerking.* Retrieved June 22, 2014, from http://www.platform31.nl/publicaties/winkelgebied-van-de-toekomst

Raven, G., & Rindertsma, C. (2012). Retailvisie aanloopstraten in beeld. Nieuwegein: NVM Business.

Rijksoverheid. (2013). *Verbod op zondagopenstelling winkels afgeschaft.* Retrieved October 7, 2013, from http://www.antwoordvoorbedrijven.nl/wetswijziging/afschaffing-verbod-zondagopenstelling?gclid=CKqfyf33hLoCFTGWtAodIx4AQg

Rouwendal, J., & Rietveld, P. (1998). An economic analysis of opening hours for shops [Electronic version]. *Journal of Retailing and Consumer Services, 5,* pp. 119-128.

Seip, M., & G. Ashworth (1998). *Binnensteden 'Analyse van gebruik en beheer'.* Alphen aan den Rijn: Samsom.

Severin, V., Louviere, J.J., & Finn, A. (2001). The stability of retail shopping choices over time and across countries [Electronic version]. *Journal of Retailing, 77,* pp. 185-202.

Taskforce DeeltijdPlus. (2010). *De discussie voorbij.* Retrieved September 30, 2013, from http://www.rijksoverheid.nl/documenten-en-publicaties/kamerstukken/2010/04/06/de-discussie-voorbij-eindrapport-taskforce-deeltijdplus.html

Tauber, E.M. (1972). Marketing notes and communications [Electronic version]. *Journal of Marketing, 36,* pp. 46-49.

Vereniging van Nederlandse Gemeenten. (2011). *Leegstand te lijf.* Retrieved May 23, 2013, from http://www.wonenbovenwinkelsnederland.nl/websites/kei_wonenbovenwinkels/docs/Leegstandtelijf.pdf

Weltevreden, J.W.J. (2007). Substitution or complementarity? How the internet changes city centre shopping [Electronic version]. *Journal of Retailing and Consumer Services, 14,* pp. 192-207.

Zandbergen, G. (2012). Kennisatelier Het Nieuwe Winkelen: Hoe nieuwe winkelconcepten onze steden veranderen. Nicis Institute and Nirov.

APPENDICES

Appendix 1 Historical developments in the Dutch retail landscape

This appendix gives insight in the evolution of retail in the Netherlands. Although it is not in the core of this research, it is an interesting addition worth mentioning here.

According to Severin, Louviere and Finn (2001, p. 186) "Retailing originally was a geographically local market activity." In the medieval Netherlands, before the presence of brick and mortar stores, centrally located marketplaces, later on replaced by covered market halls, took account of the major part of trade in Dutch cities (Braudel, cited in Evers, van Hoorn & van Oort, 2005, p. 26). Those marketplaces functioned as the centre of urban- and economic life and gave cities opportunities to develop other facilities which led to more functional diversity and on its turn to more urbanization. In the houses around the marketplaces, the first shops arose as small workplace stores, concentrated in rows. In the 16th century the more luxurious shops with storefronts (above dwellings) originate and together form large-scale, more enhanced retail networks. Supported by technological innovations, population growth and economic growth those networks took over complete inner city centres in the 17th and 18th century.

As can be concluded from those early developments, the definition of inner city centres dates back to the middle ages. As Seip and Ashworth (1998) stated, the inner city centre is a place with the physical proximity of buildings, functions, people and activities in a relatively small space, whereby accessibility advantages arise. However, the retail pattern gains its current form shortly before the twentieth century due to innovations such as the existence of new building types, a changing layout of the store, renewed business operations, attendance of large-scale logistics and government support regarding the division of functions within city centres (Evers et al., 2005, p. 28). However, not until the former years of the 20th century the Dutch retail sector gains profit from the industrial revolution resulting in a duplication of the production size ensuring increased prosperity. This leads to the further international development of store types, such as the shopping arcade, the specialty shop and the department store, whereby the Netherlands follows its European counterparts with a few decennia delay. The aperture of the first Dutch Department store, as an successor of the shopping arcade in 1912, means a retail-revolution in the Netherlands reinforcing the city centre (Kooijman, cited in Evers et al., 2005, p. 29). By the architecture of the department store, shopping becomes an isolated experience where especially women spend their time to discover, amaze and amuse (Borking, cited in Evers et al., 2005, p. 29). The postmodern experience society is born with fun-shopping as an important motive for visiting retail properties. By the connection of shopping areas with public transport the service area of stores increases enormously (Evers et al., 2005, p. 29 – p. 30).

Besides the developments in store types also driving forces such as economical regulations and spatial planning change. The number of actors increases and the major players try to dominate the market. Therefore the national government decides upon an act called 'de sluitingstijdenwet'. An act to regulate opening hours of stores meant to safeguard retailers for unfair competition of family businesses (de Mooij, cited by Evers et al., 2005, p. 30).

After the Second World War the central place theory of Christaller is seen as leading principle by the government in developing and planning new shops and retail areas. The

base of the central place theory lies in the variables of range and, the minimum support necessary to make a store or retail area profitable, the threshold. With the theory of Christaller the supply and demand side of retail are fitted; a certain amount of retail meters is allowed per inhabitant, a linear relationship which leads to a functional hierarchical pattern of shopping centres in the urban area (Janssen, 2011, p. 8). The higher the density, the more support for retail facilities and the larger the offer. Christaller distinguishes the level of the city, district and neighbourhood. This resulted in the formation of mono-functional areas in the Netherlands, where every consumer can find the searched product in the nearest centre. This restrictive post war planning policy had been leading for the current retail structure, consisting of both the planned shopping centres; new centres may be developed only when they were complementary to the existing areas, as well as the subsequently allowed peripheral and large-scale out-of-town retail developments of later decades who are rare for the Dutch retail structure. Increased car ownership and new infrastructural developments resulted into retail area competition over larger distances in the advantage of compact inner city centres with their enormous offer and attractiveness. Due to the fact consumers travel by themselves to retailers instead of the other way around, mass marketing is born and since the fifties both retail areas and stores start growing. In history this can be marked as the second retail revolution in the Netherlands (Janssen, 2011, p. 8; Evers et al., 2005, p. 32 & p. 94 & p. 110 & p. 292; Seip & Asworth, p. 41).

Infrastructural developments and innovations have always had an important role in the history of the Dutch retail landscape. Another development influenced by car ownership is the possibility of stores to locate in peripheral areas, a very effective strategy and highly adopted in European countries. However, the inner city is threatened by retail developments outside the inner city centre. Therefore in the Netherlands the PDV (peripheral retail facilities)-policy is introduced in 1973 which means an prohibition on new retail establishments outside retail areas with exceptions for dangerous and voluminous goods and products as cars, caravans and boats. In the eighties of last century also Do-It-Yourself stores, garden centres and furniture halls were allowed to establish on PDV-locations resulting in the furniture strip concept (Janssen, 2011, p. 9). By the implementation of the PDV-policy the hierarchical pattern of the Dutch retail structure was strengthened again which had besides an unwanted influence on the existing shopping centres; scarcity was created in the compact inner city centres resulting in increased rental fees. An important reason why the inner city centres structurally changed in being dominated by large retailers until today. Also by a lagging sales growth the competition has increased in favour of the larger retailers. (Evers et al., 2005, p. 34). Already since the 70-ies a decrease in the total amount of shops, but also in total expenditures per inhabitant, can be seen.

By the end of the 20th century the policy is more liberalized, including more deregulation and decentralization by policy documents on spatial planning such as GDV and Nota Ruimte. Because of ambiguity three factory outlet centres are realised contrary to Dutch planning policy. Regional retail visions have to be developed supporting the fact that new initiatives may not affect the current retail structure in order to ensure the supply structure (all functions in vicinity of each other) and limit mobility. As can be concluded from developments in other Western European countries, relaxation of policy measures in combination with market developments leads to rapid and large changes in retail structure and therefore the liberal policy measures are reversed. For example the British government

decided to forbid the development of new shopping malls outside city centres in 1994 because of the liveability of those areas (Janssen, 2011, p. 10; Evers et al., 2005, p. 14; Seip & Ashworth, 1998, p. 81 & 92).

The last few decades are characterized by internationalization of businesses, subsidiarization, increasing scale of stores and concentration, resulting in increased uniformity of Dutch retail areas in favour of large and chain stores. Those stores have a large amount of retail surface in the Netherlands, a market share of 83 per cent, the second highest percentage in Europe. However, after 1999 subsidiarization seems to decrease lightly. Scaling leads to larger shops whether or not with a broadening of product categories offered (blurring of specialities), and distances between shops, also an increase of travel distances and car use, which altogether results in a small decrease of granularity. In inner city centres those greater shops are especially department stores which ensure a higher fun-share. The increase of shopping metres could become a problem regarding city centres because of the threat of bankruptcy of those bigger shops. (Guy, Dawson, Myers & Alexander, cited in Janssen, 2011, p. 19; Evers et al., 2005, p. 35).

By the end of the twentieth century the retail sector is often seen as most important activity in inner city centres and also has become an important part of the Dutch economy and culture by the expenditures, the high employment rates (10% of the total labour force) and the leisure activities (Evers et al., 2005, p. 20; Seip & Asworth, 1998, p. 72). Diverse forms of land uses and different functions can be observed during the centuries. However, due to historical circumstances many original functions such as the commercial, trade and governmental utilities are preserved in Dutch inner city centres. Besides, space has been created for new developments in cultural, symbolic and leisure area (Seip & Ashworth, 1998, p. 9, p. 10 & p. 18). As can be concluded, developments in retail do have deep spatial and societal impact (Evers et al., 2005, p. 93). The Dutch city centres, as part of cultural heritage, have always been protected by the national government. Therefore, a large part of consumer expenditures has been in the consumer dependent cities (Seip & Ashworth, 1998). That cities are consumer dependent especially becomes clear during last years, by the changes in consumer shopping behaviour followed from the rise of internet as a shopping channel, chross-channel commerce. This is also called the next retail revolution, after the department store and the self-service. By increasing retail vacancy and decreasing sales turnovers which show the cyclical sensitivity of the sector. The sector is often used as an indicator of economic health (Raven & Rindertsma, 2012; Evers et al., 2005).

Appendix 2   Experimental design

Attribute		Level	Code	Effect coding	
Opening hours	Fashion	6:00 PM	0	1	0
		8:00 PM	1	0	1
		10:00 PM	2	-1	-1
	Beauty	6:00 PM	0	1	0
		8:00 PM	1	0	1
		10:00 PM	2	-1	-1
	Leisure	6:00 PM	0	1	0
		8:00 PM	1	0	1
		10:00 PM	2	-1	-1
Parking tariff (after 6:00 PM)		Normal	0	-1	-1
		50%-discount	1	0	1
		Free	2	1	0

Alternative	Opening hours			Parking tariff
	Fashion	Beauty	Leisure	
1	0	0	0	2
2	0	0	1	1
3	0	0	2	0
4	0	1	0	0
5	0	1	1	2
6	0	1	2	1
7	0	2	0	1
8	0	2	1	0
9	0	2	2	2
10	1	0	0	1
11	1	0	1	0
12	1	0	2	2
13	1	1	0	2
14	1	1	1	1
15	1	1	2	0
16	1	2	0	0
17	1	2	1	2
18	1	2	2	1
19	2	0	0	0
20	2	0	1	2
21	2	0	2	1
22	2	1	0	1
23	2	1	1	0
24	2	1	2	2
25	2	2	0	2
26	2	2	1	1
27	2	2	2	0

Appendix 3   Questionnaire

Welkom!

Geachte heer/mevrouw,

Mijn naam is Stefanie van den Heuvel en ik studeer aan de Technische Universiteit Eindhoven. Graag nodig ik u uit deel te nemen aan dit onderzoek. Het bestaat uit 3 delen en het invullen zal ongeveer 15 minuten duren.

Door deelname helpt u mij met mijn afstudeerproject. Daarvoor wil ik u alvast hartelijk danken!

Met vriendelijke groet,

Stefanie van den Heuvel

Uw gegevens zullen niet gepubliceerd of voor commerciële doeleinden gebruikt worden. Ze worden vertrouwelijk en anoniem verwerkt en enkel voor dit afstudeeronderzoek gebruikt.

Welkom!

Geachte heer/mevrouw,

Mijn naam is Stefanie van den Heuvel en ik studeer aan de Technische Universiteit Eindhoven. Met mijn afstudeeronderzoek wil ik meer inzicht krijgen in het **winkelgedrag** van bezoekers aan de binnenstad.

Graag nodig ik u uit deel te nemen aan dit onderzoek. Het bestaat uit 3 delen en het invullen zal ongeveer 15 minuten duren. Wanneer u vragen of opmerkingen heeft kunt u contact met mij opnemen via s.m.g.v.d.heuvel@student.tue.nl.

Door deelname helpt u mij met mijn afstudeerproject. Daarvoor wil ik u alvast hartelijk danken!

Met vriendelijke groet,

Stefanie van den Heuvel

Uw gegevens zullen niet gepubliceerd of voor commerciële doeleinden gebruikt worden. Ze worden vertrouwelijk en anoniem verwerkt en enkel voor dit afstudeeronderzoek gebruikt.

| Volgende |

■

Heeft u wel eens in een binnenstad gewinkeld?

- ○ Ja
- ○ Nee

| Vorige | Volgende |

■■■■■■■■■■■■■■■■■■■■■■■■

Helaas, u valt buiten de doelgroep van dit onderzoek.

| Vorige | Volgende |

■■■

Deel I: Uw winkelgedrag

In dit deel van de enquête worden enkele vragen gesteld over uw winkelgedrag in de binnenstad.

Welk van onderstaande binnensteden bezoekt u het meest om te winkelen?

- ○ Breda
- ○ Eindhoven
- ○ s-Hertogenbosch
- ○ Tilburg
- ○ Helmond
- ○ Bovenstaande steden bezoek ik niet

| Vorige | Volgende |

■■■■

*De overige vragen van deel I en II gaan over uw binnenstad-bezoek aan **Eindhoven**.*

| Vorige | Volgende |

■■■■■■

Hoe vaak heeft u in de afgelopen 12 maanden gewinkeld in de binnenstad van Eindhoven?

- ○ minder dan 1 keer
- ○ 1 tot 4 keer
- ○ 4 tot 12 keer
- ○ 12 tot 52 keer
- ○ 52 keer of vaker

| Vorige | Volgende |

64

Omdat u heeft aangegeven minder dan 1 keer per jaar de binnenstad van Eindhoven te bezoeken om te winkelen volgen nu een aantal vragen over uw internet-winkelgedrag.

Vorige		Volgende

Op welke dag(en) en tijd(en) gaat u meestal in de binnenstad van Eindhoven winkelen?

Kruis hieronder uw antwoorden aan

Dag	Ochtend (tot 12:00 uur)	Middag (tot 18:00 uur)	(Koop-)Avond
Maandag	☐	☐	
Dinsdag	☐	☐	
Woensdag	☐	☐	
Donderdag	☐	☐	
Vrijdag	☐	☐	☐
Zaterdag	☐	☐	
Zondag		☐	
Ik heb geen vaste dag(en) en/of tijd(en)		☐	

Vorige		Volgende

Vanuit welke locatie bezoekt u de binnenstad van Eindhoven het vaakst?

○ Mijn woning
○ Mijn werk of school / universiteit
○ Anders,
namelijk: [_____]

Vorige		Volgende

*De overige vragen van deel I en II gaan over uw binnenstad-bezoek aan **Eindhoven**, vanuit **uw woning**.*

Vorige		Volgende

Met welk vervoermiddel komt u meestal naar de binnenstad van Eindhoven als u gaat winkelen?

○ OV (trein, bus, tram, metro)
○ Auto/motor
○ (Brom)fiets
○ Te voet

Vorige		Volgende

■■■■■■■■■■■■■■■■

Hoe vaak combineert u uw winkelbezoek aan de binnenstad van Eindhoven met onderstaande activiteiten/faciliteiten?

Activiteit/faciliteit	Nooit	Soms	Meestal	Altijd
Lunch, iets drinken, fastfoodrestaurant-bezoek	☑	○	○	○
Diner in restaurant	○	○	○	○
Bioscoop, casino, theater, sportevenement, etc.	○	○	○	○
Museum, galerie	○	○	○	○
Diensten als uitzendbureau, reisbureau, kapsalon, gemeentehuis, etc.	○	○	○	○
Bezoek aan familie of kennissen	○	○	○	○
Werk of zaken	○	○	○	○
Studie	○	○	○	○
Wandelen/sightseeing	○	○	○	○
Sport/Fitness	○	○	○	○

[Vorige] [Volgende]

■■■■■■■■■■■■■■■■■

Kunt u voor onderstaande stellingen aangeven in hoeverre deze op u van toepassing zijn?

'Winkelen doe ik voor mijn plezier'

- ○ Nooit
- ○ Soms
- ○ Meestal
- ○ Altijd

'Als ik winkel wil ik zo efficiënt mogelijk mijn inkopen doen'

- ○ Nooit
- ○ Soms
- ○ Meestal
- ○ Altijd

[Vorige] [Volgende]

■■■■■■■■■■■■■■■■■■

Gaat u alleen of in gezelschap winkelen in de binnenstad van Eindhoven?

- ○ Altijd alleen
- ○ Meestal alleen, soms in gezelschap
- ○ Even vaak alleen als in gezelschap
- ○ Meestal in gezelschap, soms alleen
- ○ Altijd in gezelschap

[Vorige] [Volgende]

■■■■■■■■■■■■■■■■■■■

Hoeveel tijd besteedt u gemiddeld per keer in de binnenstad van Eindhoven om te winkelen?

○ Korter dan 30 minuten
○ 30 tot 60 minuten
○ 1 tot 2 uur
○ 2 tot 3 uur
○ 3 uur of langer

| Vorige | **Volgende** |

■■■■■■■■■■■■■■■■■■■■■

Voor welke producten gaat u naar de binnenstad van Eindhoven?

Meerdere antwoorden mogelijk

☐ Kleding en accessoires
☐ Schoenen en lederwaren
☐ Huishoudelijke artikelen
☐ Verzorgingsproducten
☐ Media/Boeken
☐ Elektronica
☐ Hobby en vrije tijd

☐ Geen van bovenstaande producten

| Vorige | **Volgende** |

■■■■■■■■■■■■■■■■■■■■■■■

Nu volgen een aantal vragen over uw internet-winkelgedrag.

| Vorige | **Volgende** |

■■■■■■■■■■■■■■■■■■■■■■■■■

Heeft u wel eens producten via internet gekocht?

○ Ja
○ Nee

| Vorige | **Volgende** |

■■■■■■■■■■■■■■■■■■■■■■■■■

Omdat u heeft aangegeven dat u geen producten via internet koopt gaat u nu door naar deel II van de enquête.

| Vorige | **Volgende** |

█████████████████████████

Hoe vaak heeft u in de afgelopen 12 maanden (een) product(en) via internet gekocht?

- ○ minder dan 1 keer
- ○ 1 tot 4 keer
- ○ 4 tot 12 keer
- ○ 12 tot 52 keer
- ○ 52 keer of vaker

[Vorige]   [Volgende]

█████████████████████████

Wat is voor u de belangrijkste reden om via internet te kopen?

- ○ Prijsvoordeel
- ○ Ik heb geen zin om naar de stad te gaan
- ○ Ik heb geen tijd om naar de stad te gaan
- ○ Het is gemakkelijk dat alles thuisbezorgd wordt
- ○ Ik weet niet in welke 'fysieke' winkel ik het product kan vinden/de producten komen uit het buitenland
- ○ Anders,

namelijk: [_____]

[Vorige]   [Volgende]

█████████████████████████

Welk deel van uw aankopen (in de genoemde productcategorieën) doet u via internet?
Als u een product überhaupt nooit koopt, vul dan n.v.t. in.

Productcategorie	0%	1-33%	34-66%	67-99%	100%	n.v.t.
Kleding en accessoires	○	○	○	○	○	○
Schoenen en lederwaren	○	○	○	○	○	○
Huishoudelijke artikelen	○	○	○	○	○	○
Verzorgingsproducten	○	○	○	○	○	○
Media/boeken	○	○	○	○	○	○
Elektronica	○	○	○	○	○	○
Hobby en vrije tijd	○	○	○	○	○	○

In hoeverre bent u het met de volgende stelling eens?

'Ik winkel minder in de binnenstad omdat ik mijn aankopen via internet doe'

○ Zeer eens ○ Eens ○ Eens noch oneens ○ Oneens ○ Zeer oneens

[Vorige]   [Volgende]

Deel II: De toekomst van uw winkelgedrag

In dit deel van de enquête wordt ingegaan op de toekomst van de binnenstad. Stelt u zich voor dat de winkels in de binnenstad van Eindhoven 's avonds langer open zouden zijn. Wat betekent dit voor uw bezoekgedrag aan de binnenstad van Eindhoven?

EERST LEGGEN WE EEN PAAR DINGEN UIT.

Winkels zijn open tot:
18:00 uur   20:00 uur   of 22:00 uur

De volgende typen winkels worden onderscheiden:
-Mode en luxe   *bijv. H&M, Zeeman, Bijenkorf, V&D, Blokker, Manfield, van Haren, Six, Pearle, etc.*
-Persoonlijke verzorging   *bijv. Rituals, Etos, ICI Paris XL, etc.*
-Media en vrije tijd   *bijv. Mediamarkt, Belcompany, Intersport, Bruna, D-reizen, Muziekwinkel, etc.*

Na 18:00 uur is het parkeertarief:
-óf hetzelfde als overdag
-óf 50% van het overdag-tarief
-óf gratis

| Vorige | | Volgende |

VERVOLG UITLEG

Ook kunt u er vanuit gaan dat:
-Alle winkels 's ochtends openen op de normale tijd.
-Het openbaar vervoer met dezelfde frequentie rijdt als overdag (tot één uur na de laatste sluitingstijd).
-Andere voorzieningen zoals bijv. horeca, bioscoop en diensten hun openingstijden aanpassen aan de laatste winkel-sluitingstijd.

In de tabel ziet u een **voorbeeld** van een mogelijke toekomstige situatie voor de binnenstad van Eindhoven

Situatie	Sluitingstijden naar type winkel			Parkeertarief na 18:00 uur
	Mode en luxe	**Persoonlijke verzorging**	**Media en vrije tijd**	
	22:00 uur	*18:00 uur*	*20:00 uur*	*gratis*

In deze situatie sluiten winkels in de mode en luxe-categorie om 22:00 uur, in de persoonlijke verzorging-categorie om 18:00 uur en media- en vrije tijd-winkels gaan om 20:00 uur dicht. Het parkeertarief is gratis na 18:00 uur.

EINDE UITLEG

U KRIJGT NU TWEE VERGELIJKBARE SITUATIES TE ZIEN MET BIJBEHORENDE VRAGEN.

| Vorige | | Volgende |

■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■

Stelt u zich de volgende situatie voor:

Situatie	Sluitingstijden naar type winkel			Parkeertarief na 18:00 uur
	Mode en luxe	Persoonlijke verzorging	Media en vrije tijd	
	22:00 uur	*22:00 uur*	*22:00 uur*	*normaal*

Kunt u aangeven wat deze situatie voor uw bezoekgedrag aan de binnenstad van Eindhoven betekent?

Bezoekgedrag	Nooit	Soms	Meestal	Altijd
Zou u op een later tijdstip gaan winkelen	○	○	○	○
Zou u langer gaan winkelen	○	○	○	○
Zou u vaker gaan winkelen	○	○	○	○

Vorige		Volgende

■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■

Wanneer u nog eens naar deze situatie kijkt:

Situatie	Sluitingstijden naar type winkel			Parkeertarief na 18:00 uur
	Mode en luxe	Persoonlijke verzorging	Media en vrije tijd	
	22:00 uur	*22:00 uur*	*22:00 uur*	*normaal*

Vanuit welke locatie zou u de binnenstad van Eindhoven bezoeken, uitgaande van deze situatie?

- ○ Mijn woning
- ○ Mijn werk-/studielocatie
- ○ Anders,
namelijk: [_____]

Uitgaande van bovenstaande situatie, met welk vervoermiddel zou u naar de binnenstad van Eindhoven komen als u gaat winkelen?

- ○ OV (trein, bus, tram, metro)
- ○ Auto/motor
- ○ (Brom)fiets
- ○ Te voet

Uitgaande van bovenstaande situatie, hoe vaak zou u uw bezoek aan de binnenstad van Eindhoven combineren met onderstaande activiteiten/faciliteiten?

Activiteit/faciliteit	Nooit	Soms	Meestal	Altijd
Lunch, iets drinken, fastfoodrestaurant-bezoek	○	○	○	○
Diner in restaurant	○	○	○	○
Bioscoop, casino, theater, sportevenement, etc.	○	○	○	○
Museum, galerie	○	○	○	○
Diensten als uitzendbureau, reisbureau, kapsalon, gemeentehuis, etc.	○	○	○	○
Bezoek aan familie of kennissen	○	○	○	○
Werk of zaken	○	○	○	○
Studie	○	○	○	○
Wandelen/sightseeing	○	○	○	○
Sport/Fitness	○	○	○	○

Uitgaande van bovenstaande situatie, komt u dan winkelen in de binnenstad van Eindhoven:

Bezoekdoel	Nooit	Soms	Meestal	Altijd
voor uw plezier?	○	○	○	○
om efficient uw inkopen te doen?	○	○	○	○

Uitgaande van bovenstaande situatie, zou u meestal alleen of in gezelschap komen naar de binnenstad van Eindhoven?

○ Alleen
○ Meestal alleen, soms in gezelschap
○ Even vaak alleen als in gezelschap
○ Meestal in gezelschap, soms alleen
○ In Gezelschap

[Vorige]　　[Volgende]

■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■

Stelt u zich de volgende situatie voor:

Situatie	Sluitingstijden naar type winkel			Parkeertarief na 18:00 uur
	Mode en luxe	Persoonlijke verzorging	Media en vrije tijd	
	20:00 uur	*20:00 uur*	*20:00 uur*	*50%*

Kunt u aangeven wat deze situatie voor uw bezoekgedrag aan de binnenstad van Eindhoven betekent?

Bezoekgedrag	Nooit	Soms	Meestal	Altijd
Zou u op een later tijdstip gaan winkelen	○	○	○	○
Zou u langer gaan winkelen	○	○	○	○
Zou u vaker gaan winkelen	○	○	○	○

[Vorige]　　[Volgende]

■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■

Wanneer u nog eens naar deze situatie kijkt:

Situatie	Sluitingstijden naar type winkel			Parkeertarief na 18:00 uur
	Mode en luxe	Persoonlijke verzorging	Media en vrije tijd	
	20:00 uur	*20:00 uur*	*20:00 uur*	*50%*

Vanuit welke locatie zou u de binnenstad van Eindhoven bezoeken, uitgaande van deze situatie?

○ Mijn woning
○ Mijn werk-/studielocatie
○ Anders,
namelijk: [_____]

Uitgaande van bovenstaande situatie, met welk vervoermiddel zou u naar de binnenstad van Eindhoven komen als u gaat winkelen?

○ OV (trein, bus, tram, metro)
○ Auto/motor
○ (Brom)fiets
○ Te voet

71

Uitgaande van bovenstaande situatie, hoe vaak zou u uw bezoek aan de binnenstad van Eindhoven combineren met onderstaande activiteiten/faciliteiten?

Activiteit/faciliteit	Nooit	Soms	Meestal	Altijd
Lunch, iets drinken, fastfoodrestaurant-bezoek	○	○	○	○
Diner in restaurant	○	○	○	○
Bioscoop, casino, theater, sportevenement, etc.	○	○	○	○
Museum, galerie	○	○	○	○
Diensten als uitzendbureau, reisbureau, kapsalon, gemeentehuis, etc.	○	○	○	○
Bezoek aan familie of kennissen	○	○	○	○
Werk of zaken	○	○	○	○
Studie	○	○	○	○
Wandelen/sightseeing	○	○	○	○
Sport/Fitness	○	○	○	○

Uitgaande van bovenstaande situatie, komt u dan winkelen in de binnenstad van Eindhoven:

Bezoekdoel	Nooit	Soms	Meestal	Altijd
voor uw plezier?	○	○	○	○
om efficient uw inkopen te doen?	○	○	○	○

Uitgaande van bovenstaande situatie, zou u meestal alleen of in gezelschap komen naar de binnenstad van Eindhoven?

- ○ Alleen
- ○ Meestal alleen, soms in gezelschap
- ○ Even vaak alleen als in gezelschap
- ○ Meestal in gezelschap, soms alleen
- ○ In Gezelschap

| Vorige | Volgende |

U gaat nu **vijf keer** kiezen tussen twee situaties.

| Vorige | Volgende |

Keuzesituatie

Situatie	Sluitingstijd naar type winkel >			Parkeertarief na 18:00 uur	Voorkeur
	Mode en luxe	Persoonlijke verzorging	Media en vrije tijd		
A	*20:00 uur*	*20:00 uur*	*18:00 uur*	*gratis*	○
B	*18:00 uur*	*20:00 uur*	*20:00 uur*	*gratis*	○
				Ik heb geen voorkeur	○

| Vorige | Volgende |

Keuzesituatie

Situatie	Sluitingstijd naar type winkel >			Parkeertarief na 18:00 uur	Voorkeur
	Mode en luxe	Persoonlijke verzorging	Media en vrije tijd		
A	20:00 uur	22:00 uur	18:00 uur	normaal	○
B	20:00 uur	18:00 uur	22:00 uur	gratis	○
				Ik heb geen voorkeur	○

[Vorige]   [Volgende]

Keuzesituatie

Situatie	Sluitingstijd naar type winkel >			Parkeertarief na 18:00 uur	Voorkeur
	Mode en luxe	Persoonlijke verzorging	Media en vrije tijd		
A	20:00 uur	18:00 uur	22:00 uur	gratis	○
B	18:00 uur	20:00 uur	22:00 uur	50%	○
				Ik heb geen voorkeur	○

[Vorige]   [Volgende]

Keuzesituatie

Situatie	Sluitingstijd naar type winkel >			Parkeertarief na 18:00 uur	Voorkeur
	Mode en luxe	Persoonlijke verzorging	Media en vrije tijd		
A	22:00 uur	18:00 uur	18:00 uur	normaal	○
B	18:00 uur	22:00 uur	22:00 uur	gratis	○
				Ik heb geen voorkeur	○

[Vorige]   [Volgende]

Keuzesituatie

Situatie	Sluitingstijd naar type winkel >			Parkeertarief na 18:00 uur	Voorkeur
	Mode en luxe	Persoonlijke verzorging	Media en vrije tijd		
A	20:00 uur	20:00 uur	18:00 uur	gratis	○
B	18:00 uur	22:00 uur	20:00 uur	normaal	○
				Ik heb geen voorkeur	○

[Vorige]   [Volgende]

Keuzesituatie

Situatie	Sluitingstijd naar type winkel >			Parkeertarief na 18:00 uur	Voorkeur
	Mode en luxe	Persoonlijke verzorging	Media en vrije tijd		
A	20:00 uur	20:00 uur	18:00 uur	gratis	○
B	18:00 uur	22:00 uur	20:00 uur	normaal	○
				Ik heb geen voorkeur	○

[Vorige]   [**Volgende**]

In deel I heeft u aangegeven wat uw huidige winkeltijden zijn.
Nu volgt dezelfde vraag nog een keer maar zijn ruimere openingstijden mogelijk; alle winkels kunnen open zijn tot 22:00 uur.

Op welke dag(en) en tijd(en) zou u bij voorkeur in de binnenstad van Eindhoven gaan winkelen?

Kruis hieronder uw antwoorden aan

Dag	Ochtend (tot 12:00 uur)	Middag (tot 18:00 uur)	Avond (tot 22:00 uur)
Maandag	☐	☐	☐
Dinsdag	☐	☐	☐
Woensdag	☐	☐	☐
Donderdag	☐	☐	☐
Vrijdag	☐	☐	☐
Zaterdag	☐	☐	☐
Zondag		☐	☐
Ik heb geen voorkeur		☐	

[Vorige]   [**Volgende**]

74

Deel III: Persoonlijke Situatie

Tot slot nog enkele vragen over uw persoonlijke situatie. Deze gegevens worden uiteraard volledig anoniem verwerkt en zullen niet kunnen worden herleid naar een persoon of adres.

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren.

Vorige	Volgende

Wat is uw geslacht?

○ Man ○ Vrouw

Wat is uw leeftijd in jaren?

○ < 20 jaar ○ 20-29 ○ 30-39 ○ 40-49 ○ 50-64 ○ 65 jaar en ouder

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren. Alle gegevens worden uiteraard volledig anoniem verwerkt en kunnen niet worden herleid naar een persoon of adres.

Vorige	Volgende

Hoe is de samenstelling van uw gezin?

○ Alleenstaand (ook: samenwonend met huisgenoten)
○ Thuiswonend bij ouders
○ Alleenstaand met thuiswonend(e) kind(eren); jongste kind onder 12 jaar
○ Alleenstaand met thuiswonend(e) kind(eren); jongste kind van 12 jaar of ouder
○ Met partner zonder thuiswonend(e) kind(eren)
○ Met partner met thuiswonend(e) kind(eren); jongste kind onder 12 jaar
○ Met partner met thuiswonend(e) kind(eren); jongste kind van 12 jaar of ouder

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren. Alle gegevens worden uiteraard volledig anoniem verwerkt en kunnen niet worden herleid naar een persoon of adres.

Vorige	Volgende

Welk van onderstaande categorieën is het meest op u van toepassing?

○ Ik werk fulltime
○ Ik werk parttime
○ Ik ben student
○ Ik ben gepensioneerd
○ Ik heb geen baan

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren. Alle gegevens worden uiteraard volledig anoniem verwerkt en kunnen niet worden herleid naar een persoon of adres.

Vorige	Volgende

Heeft u regelmatige werktijden tussen 8:00 uur en 19:00 uur?

- ○ Ja
- ○ Nee

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren. Alle gegevens worden uiteraard volledig anoniem verwerkt en kunnen niet worden herleid naar een persoon of adres.

| Vorige | Volgende |

Wat is dan het meest op u van toepassing?

- ○ Ik heb regelmatige werktijden (deels) buiten 8:00 uur en 19:00 uur
- ○ Ik heb onregelmatige werktijden tussen 8:00 uur en 19:00 uur
- ○ Ik heb onregelmatige werktijden (deels) buiten 8:00 uur en 19:00 uur
- ○ Anders,

namelijk: [   ]

- ☐ Ik werk ook in weekenden

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren. Alle gegevens worden uiteraard volledig anoniem verwerkt en kunnen niet worden herleid naar een persoon of adres.

| Vorige | Volgende |

Welk van onderstaande categorieën is het meest van toepassing op uw partner?

- ○ Mijn partner werkt fulltime
- ○ Mijn partner werkt parttime
- ○ Mijn partner is student
- ○ Mijn partner is gepensioneerd
- ○ Mijn partner heeft geen baan

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren. Alle gegevens worden uiteraard volledig anoniem verwerkt en kunnen niet worden herleid naar een persoon of adres.

| Vorige | Volgende |

Heeft uw partner regelmatige werktijden tussen 8:00 uur en 19:00 uur?

- ○ Ja
- ○ Nee

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren. Alle gegevens worden uiteraard volledig anoniem verwerkt en kunnen niet worden herleid naar een persoon of adres.

| Vorige | Volgende |

Berg Enquête System © 2007 Design Systems

Wat is het meest van toepassing op uw partner?

- ○ Mijn partner heeft regelmatige werktijden (deels) buiten 8:00 uur en 19:00 uur
- ○ Mijn partner heeft onregelmatige werktijden tussen 8:00 uur en 19:00 uur
- ○ Mijn partner heeft onregelmatige werktijden (deels) buiten 8:00 uur en 19:00 uur
- ○ Anders,

namelijk: [   ]

- ☐ Mijn partner werkt ook in weekenden

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren. Alle gegevens worden uiteraard volledig anoniem verwerkt en kunnen niet worden herleid naar een persoon of adres.

Vorige	**Volgende**

Wat zijn de vier cijfers van de postcode van uw werk-/studielocatie?

[   ]

En van uw woonadres?

[   ]

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren. Alle gegevens worden uiteraard volledig anoniem verwerkt en kunnen niet worden herleid naar een persoon of adres.

Vorige	**Volgende**

Hoeveel bedraagt het bruto inkomen van uw huishouden?

- ○ Minder dan 20.000 euro per jaar
- ○ 20.000 tot 30.000 euro per jaar
- ○ 30.000 tot 40.000 euro per jaar
- ○ 40.000 euro per jaar of meer
- ○ Geen antwoord

Dit wordt u gevraagd om de representativiteit van het onderzoek te kunnen beoordelen, en om te kunnen onderzoeken of de gemaakte keuzes in de voorgaande keuzesituaties gerelateerd zijn aan bepaalde persoonlijke factoren. Alle gegevens worden uiteraard volledig anoniem verwerkt en kunnen niet worden herleid naar een persoon of adres.

Vorige	**Volgende**

Dit is het einde van de enquête.

Hartelijk dank voor uw medewerking!

Bent u geïnteresseerd in de resultaten van dit onderzoek vul dan hier uw e-mailadres in:

[   ]

Vorige	**Volgende**

Dit is het einde van de enquête.

Hartelijk dank voor uw medewerking!

| Vorige | Volgende |

Appendix 4   Current shopping determinants
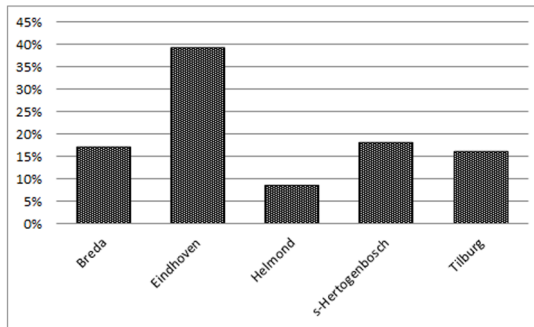
Most often visited city centre for shopping
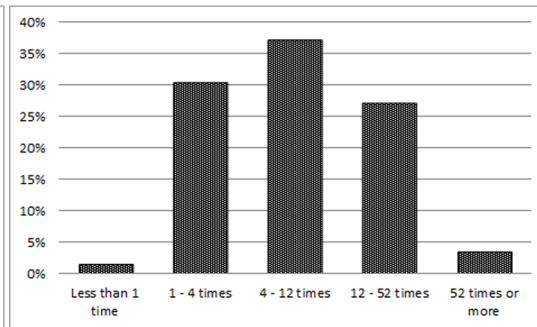
Visit frequency (How many visits in last 12 months)
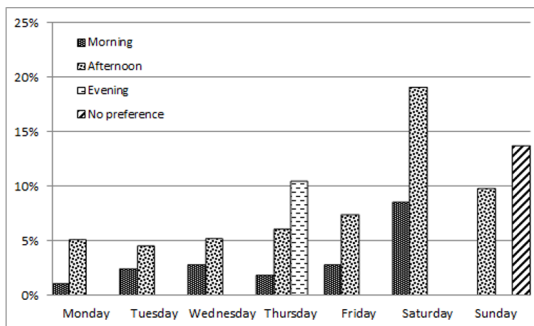
Current shopping days and moments Breda, Tilburg, DB
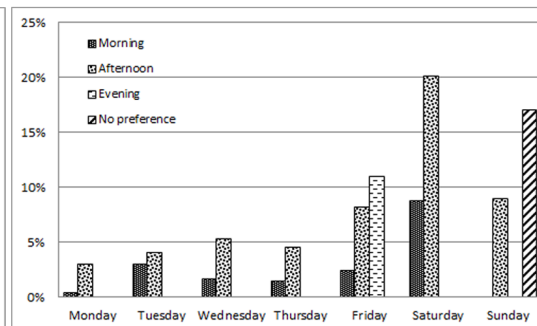
Current shopping days and moments Eindhoven, Helmond
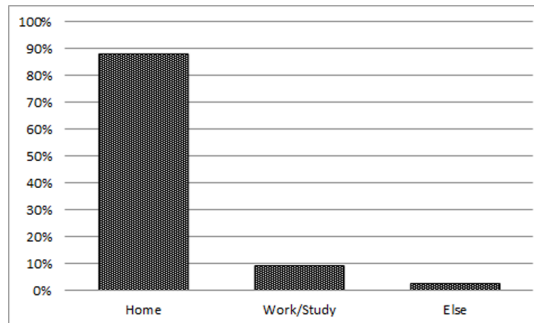
Trip origin
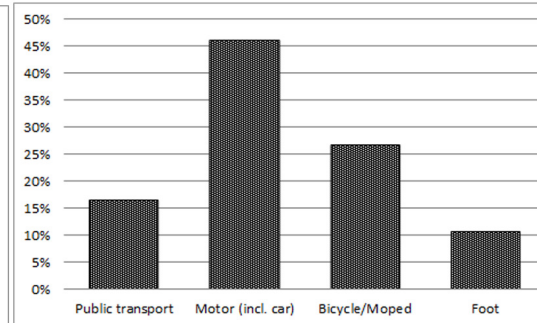
Mode of transport

Activities combined with a shopping trip

79
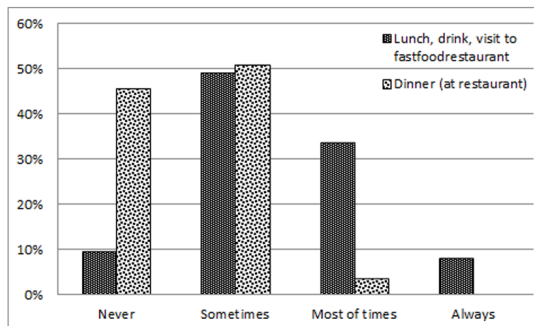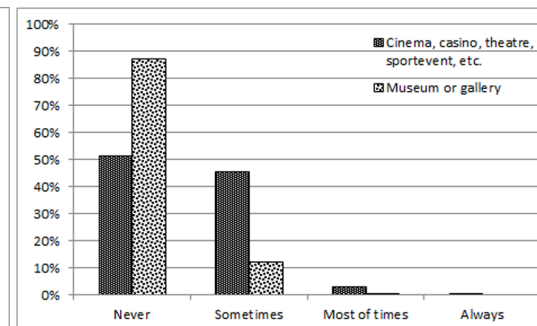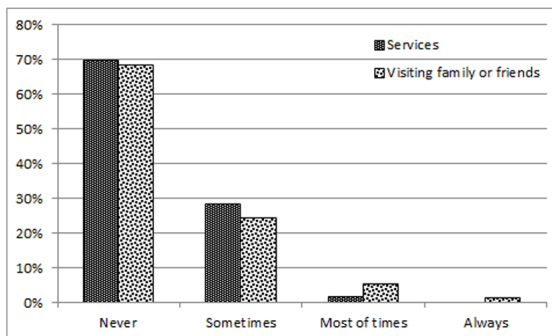
Activities combined with a shopping trip
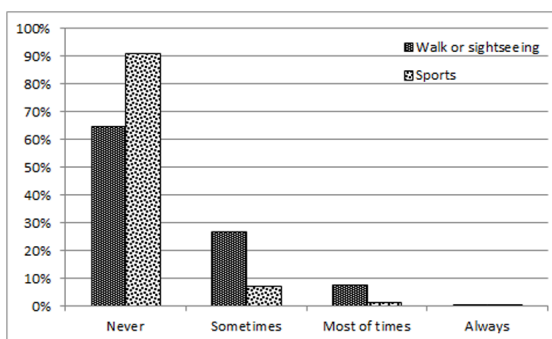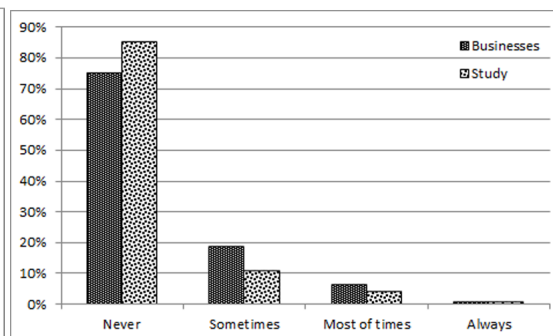
Activities combined with a shopping trip
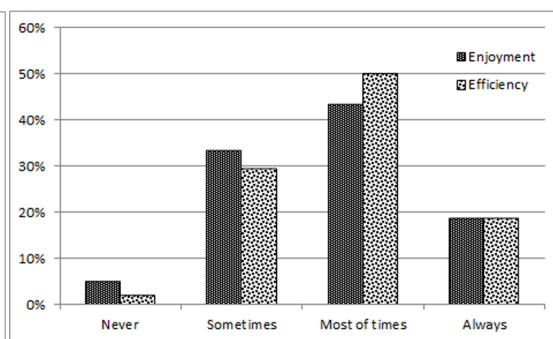
Shopping purpose
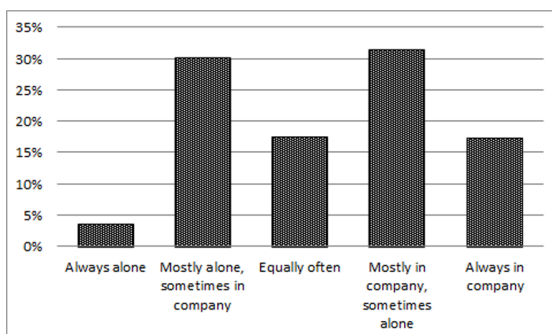
Visitor composition
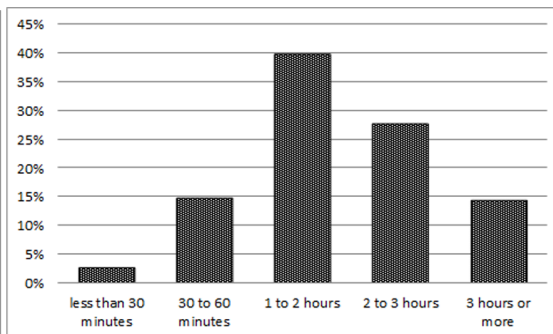
Modal time spent in city centre
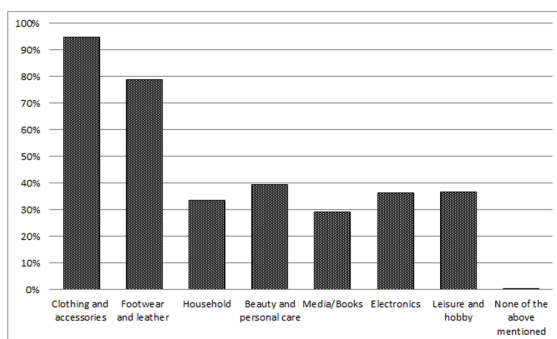
Products shopped for in the inner city centre

Appendix 5   Descriptive statistics and correlation matrix NLogit

```
Descriptive Statistics for  11 variables
--------+--------------------------------------------------------------
Variable|      Mean       Std.Dev.      Minimum       Maximum    Cases Missing
--------+--------------------------------------------------------------
    ALTI|          2.0     .816534           1.0           3.0    11040      0
  CHOICE|     .333333      .471426           0.0           1.0    11040      0
     ASC|     .666667      .471426           0.0           1.0    11040      0
FASHION1|    -.001721      .668075     -1.000000           1.0    11040      0
FASHION2|    -.003623      .666642     -1.000000           1.0    11040      0
 BEAUTY1|     .003442      .670031     -1.000000           1.0    11040      0
 BEAUTY2|    -.004982      .663705     -1.000000           1.0    11040      0
LEISURE1|    -.006250      .662738     -1.000000           1.0    11040      0
LEISURE2|     .004710      .670969     -1.000000           1.0    11040      0
PTARIFF1|     .005435      .668394     -1.000000           1.0    11040      0
PTARIFF2|    -.000725      .663791     -1.000000           1.0    11040      0
--------+--------------------------------------------------------------
```

```
--------+-------------------------------------------------------------------
Cor.Mat.|FASHION1 FASHION2  BEAUTY1  BEAUTY2 LEISURE1 LEISURE2 PTARIFF1 PTARIFF2
--------+-------------------------------------------------------------------
FASHION1| 1.00000   .50300  -.03318  -.02372  -.07348  -.04949   .04526   .00878
FASHION2|  .50300  1.00000  -.00220   .04807  -.02671  -.06862   .01143  -.02826
 BEAUTY1| -.03318  -.00220  1.00000   .50095  -.03892  -.02099   .04284   .01834
 BEAUTY2| -.02372   .04807   .50095  1.00000  -.01881   .02629   .02171   .04770
LEISURE1| -.07348  -.02671  -.03892  -.01881  1.00000   .50100   .05120   .04117
LEISURE2| -.04949  -.06862  -.02099   .02629   .50100  1.00000   .01913   .00652
PTARIFF1|  .04526   .01143   .04284   .02171   .05120   .01913  1.00000   .49738
PTARIFF2|  .00878  -.02826   .01834   .04770   .04117   .00652   .49738  1.00000
```

Appendix 6   MNL table

| | | Basic MNL | | MNL three age groups | | | | | |
| | | All ages *736 respondents* | | Young (< 30) *229 respondents* | | Middle (30-49) *245 respondents* | | Old (50 years and older) *262 respondents* | |
Variables		Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
Opening hours	FASHION1	-0.65	0.00***	-1.02	0.00***	-0.60	0.00***	-0.38	0.00***
	FASHION2	0.30	0.00***	0.40	0.00***	0.27	0.00***	0.24	0.00***
	BEAUTY1	0.01	0.8128	-0.02	0.77	-0.01	0.88	0.02	0.75
	BEAUTY2	0.06	0.1053	0.03	0.62	0.15	0.03**	0.00	0.99
	LEISURE1	-0.20	0.00***	-0.37	0.00***	-0.15	0.04**	-0.12	0.08*
	LEISURE2	0.15	0.00***	0.16	0.02**	0.16	0.01**	0.12	0.07*
Parking tariff (after 6:00 PM)	PTARIFF1	0.57	0.00***	0.41	0.00***	0.66	0.00***	0.77	0.00***
	PTARIFF2	0.02	0.56	0.13	0.04**	0.05	0.45	-0.14	0.04**
Interaction variables		Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
Fashion and Beauty	F1B1	0.14	0.02**	0.23	0.02**	0.12	0.26	0.06	0.56
	F1B2	0.01	0.91	0.02	0.86	-0.01	0.92	0.00	0.97
	F2B1	0.04	0.40	0.11	0.23	0.07	0.48	-0.03	0.74
	F2B2	-0.02	0.76	-0.01	0.91	0.00	0.99	-0.04	0.65
Fashion and Leisure	F1L1	-0.05	0.44	-0.08	0.45	-0.10	0.39	0.10	0.37
	F1L2	0.04	0.49	0.06	0.56	0.09	0.38	-0.04	0.72
	F2L1	0.05	0.36	0.02	0.81	0.08	0.38	0.03	0.72
	F2L2	0.02	0.71	-0.02	0.80	-0.01	0.87	0.09	0.36
Beauty and Leisure	B1L1	0.08	0.16	0.15	0.13	0.08	0.39	-0.05	0.64
	B1L2	-0.03	0.53	-0.12	0.19	-0.01	0.95	-0.01	0.95
	B2L1	-0.11	0.06*	-0.07	0.52	-0.18	0.08*	-0.02	0.87
	B2L2	0.12	0.02**	0.06	0.54	0.16	0.08*	0.12	0.20
ASC		-0.07	0.04**	1.08	0.00***	-0.15	0.02**	-0.77	0.00***
LL_M			-3749.80		-999.92		-1232.32		-1272.49
LL_0			-4042.89		-1257.91		-1345.80		-1439.18
R^2			0.07		0.21		0.08		0.12

*   significance at 90% confidence level

** significance at 95% confidence level

*** significance at 99% confidence level

Appendix 7   Preferred shopping days and times

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday
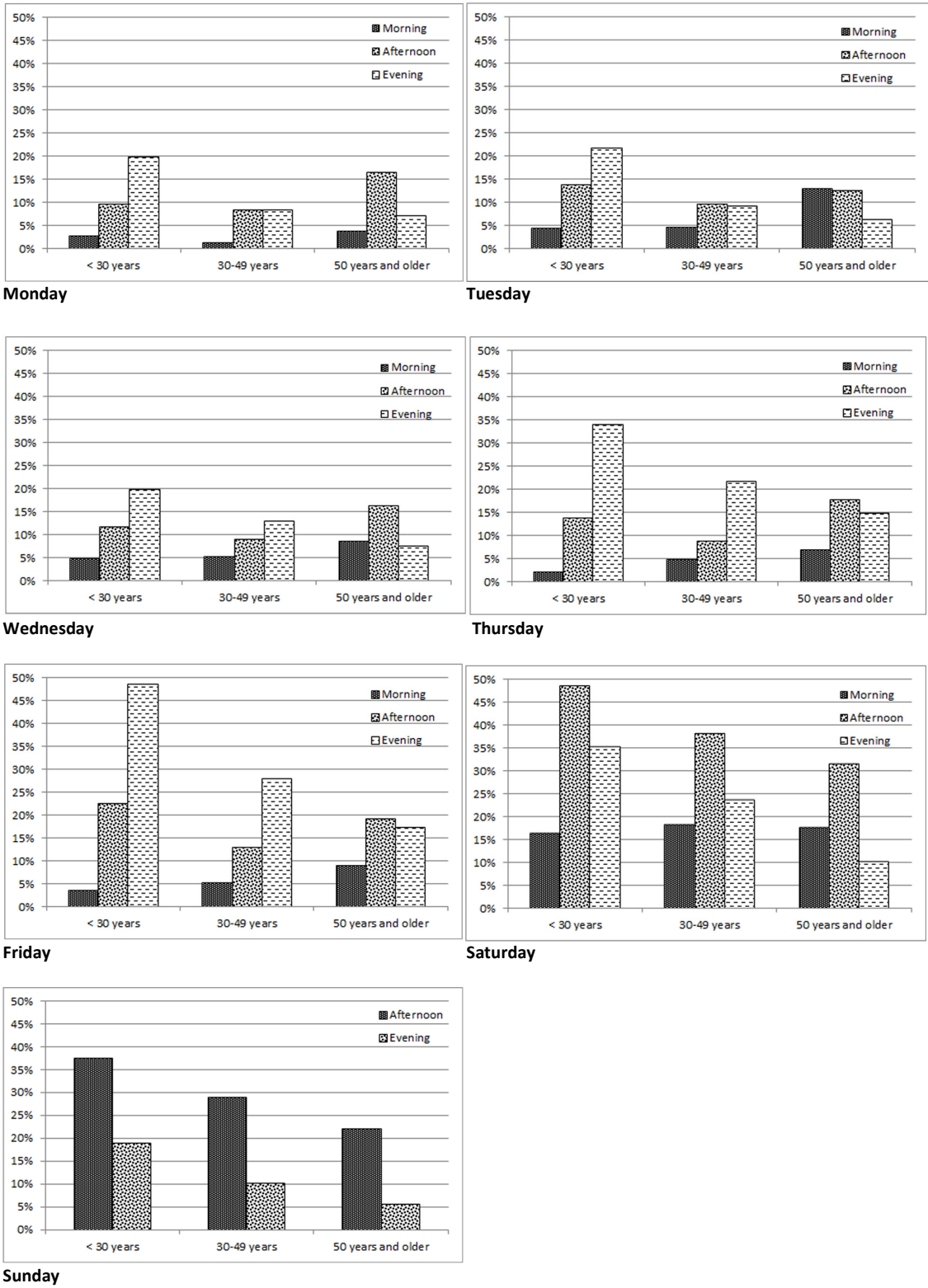
ENGLISH SUMMARY

EXTENDED SHOP OPENING HOURS IN MEDIUM-SIZED CITY CENTRES
Gaining insight in consumer shopping preferences and behaviour
Author: Stefanie M.G. van den Heuvel

Graduation program:
Construction Management and Urban Development 2013-2014

Graduation committee:
Prof. dr. ir. W.F. (Wim) Schaefer
Ir. A.W.J. (Aloys) Borgers
Dr. ing. P.J.H.J. (Peter) van der Waerden
Drs. J.P. (Jeroen) Verwaaijen

Date of graduation:
26-06-14

ABSTRACT
In the Netherlands, vacancy of retail properties is a relatively new problem in contrast to vacancy in the office market, which has been on the agenda for years. The main reason for this development is the web shop-march. The service economy is no longer bounded from nine to five while opening hours of physical shops still are. By gaining insight in consumer preferences and behavior concerning extended shop opening hours, potential for inner cities to compete with online shops will increase. Resulting in more viable and profitable retail surface.

Keywords: Consumer preferences, retail facilities, opening hours, shopping behaviour, leisure behaviour, stated choice experiment

INTRODUCTION
While most retail areas in the Netherlands have been unchanged the last twenty years, the current retail market is structurally changing from supply-oriented towards demand-driven; consumers are better informed, have different channels for buying the same products and have less time to go shopping or spending free time than twenty years ago. Compared to other European countries, the Netherlands has one of the most advanced retail property markets with over 30 million square metres of retail surface (Detailhandel Nederland, 2013). While the existing retail structure has a good base, it becomes more difficult to respond to the changing needs of the customer. Therefore consumer preferences are more important than before and should be taken into account in order to broaden the chances of existing retailers and investment companies before the situation will even get worse; structural vacancy leads to neighbourhood degradation and declining quality of life. However, consumers are flexible regarding which retail area they visit and the kilometres they are willing to travel. Though, the time of visit is limited by the opening hours. This means that opening hours of physical retail facilities will ask for another way of thinking in order to respond to consumers' demand. Consumers consume on moments in time which are preferable for them. Online retailers anticipate to those needs by being on-line at all times.

Since July 2013 new national legislation ensures exemption regarding Sunday openings of retail facilities. With the recently introduced regulation, the attention to the current retail

landscape, especially regarding opening hours, in the Netherlands is revealed; there is need for a service economy no longer bounded to the nine-to-five norm (Taskforce Deeltijdplus, 2010). But less is known about the consequences of a shift in retail opening hours on consumer shopping and leisure behaviour.

An extension of opening hours seems an interesting first step in making the inner city retail areas more attractive and strengthening the competitiveness towards internet shopping. Although, this aspect did not get much attention in scientific research before. It is not known what consequences an extension of opening hours has regarding consumer shopping-, travel- and leisure behaviour in medium-sized city centres. In order to empirically provide insight in consequences for shopping and leisure behaviour when opening hours of shops are extended, the main research question is:

'How do extended opening hours of different types of retail facilities in medium-sized city central shopping areas influence consumer behaviour, and what role do parking tariffs play in this context?'

Leaded by two sub-questions:

- *'What is typical shopping behaviour of visitors in inner city areas of medium-sized Dutch cities?'*
- *'What are ideal opening hours and parking tariffs, and how would these opening hours and parking tariffs influence consumer behaviour?'*

For this research stated choice will be applied, containing three important steps. First, variables will be selected out of literature research. With those variables, or attributes, different scenarios can be designed. After this, a questionnaire will be created, consisting partly of the scenarios where respondents are repeatedly asked to choose between two scenarios. Respondents will also answer extra questions to gain insight in their future behaviour. Discrete choice modelling and logistic regression will be used to analyse the data, in order to gain insight into and predict consumer choices in different scenarios. Resulting in interesting conclusions and recommendations.

THEORETICAL BACKGROUND
The Dutch traditional intricate, fine-woven retail landscape has been highly determined by the central places theory of Christaller. Three main levels of retail agglomerations are distinguished nowadays. In the urban tissue, the level of the city centre and supporting centre, outside the peripheral retail establishment. Without retail, the city centre would not be interesting for a huge amount of visitors. Therefore, it is important to ensure the retail vitality. A combination between leisure facilities, such as restaurants, and shops strengthens the attraction of a city centre. Other aspects such as accessibility and parking facilities are of importance, a prerequisite which can lead to an increase in the service area of the city centre. The more attractive the city centre, the more and the longer consumers stay (Evers, van Hoorn & van Oort, 2005).

While retail areas in the Netherlands have been unchanged the last twenty years, the current retail market is structurally changing from supply-oriented towards demand-driven. Where supply created demand before, the last years consumer-dependency of shopping areas has become quite clear. The last decades are characterized by wish-full thinking; by creating an environment with enough amenity value, it will lead automatically to enough customers. At this moment, the Dutch retail market is saturated which means that municipalities need to rearrange because of the fact the retail vacancy only increased by the

last seven years resulting in a percentage of 6.9% of total retail stock in January 2014; 7.3% of total retail surface, which is seen as problematic (Locatus, 2014). The coming seven years, the retail surface in urban areas will decline with another two million square meters, and in total 17% of the retail surface will disappear perhaps. The main reason for this development is the web shop-march, especially clothes will be bought more often online. Other causes of retail vacancy are affected by social and demographical factors such as aging and dejuvenation of the population, the economic crisis and the aspect of 'consuminderen', the tendency to consume less, resulting from decreased scarcity. Those developments are partly a consequence of cyclical influences, however, a large part will have a structural character and determine the future retail structure. Retail vacancy has a bad influence on the quality of life resulting in decreased community ties and cohesion. With declining social safety and neighbourhood liveability influencing urban sustainability. According to Barata-Salgueiro and Erkip (2014) "urban sustainability has been associated with preserving balanced retail systems set in diverse facilities and shopping environments that are able to respond efficiently to the needs, wants and desires of different kinds of consumers". Therefore, the consumer, although it is not a decision-maker, is an important actor to take into account because of his/her continuously changing behaviour.

Shopping behaviour
Shopping in inner city centres is the second most popular recreational activity in the Netherlands and ensures high employment rates in municipalities. Shopping trips are made for the goal of goods acquisition in a purposeful and efficient process, and purposes such as social interaction, enjoyment, pleasure and entertainment. Economic shoppers are attracted by a convenient retail outlet location for purchasing goods, instead of the recreational shopper who wants experience and an attractive atmosphere (Bellenger & Korgaonkar, 1980). Severin, Louviere and Finn (2001) found out that a convenient location is most important concerning shopping centre choice. Other aspects such as "good quality, wide selection, good service, nice atmosphere and good sales/bargains" have also proven to be significant. When it comes to a recreational shopping day, safety, size of shops and shopping area, comfort, atmosphere, shop attractiveness, accessibility and parking tariffs are important for consumers. The distance consumers are willing to travel depends on the shopping motivation. The consumer will prefer a shopping area with parking facilities and tariffs proportional to the retail offer and seems less sensitive to distance when it comes to a recreational shopping day. Consumers appreciate the extensive assortment of large stores and will travel for longer distances to gain such an environment. Although, parking facilities have to be easy accessible and inexpensive. Besides spatial aspects and motivations, consumer behaviour is influenced by socio-demographic or socio-economic factors such as gender and age; lifestyle-aspects such as time spent working also play a role concerning shopping behaviour (Finn & Louviere, 1990). Influenced by the fact that spare time has decreased by an increase in dual-income households, and also by the rise of internet shopping, the demand for inner city centres offering a complete leisure experience increases (Janssen, 2011). The ability to shop online instead of personally visiting a physical store has largely changed the way shopping is incorporated in consumer's everyday life in the past decade (Hsiao, 2009). Although, physical stores do have advantages over online shopping through the pleasure gained from the combination between retail and leisure which is more attractive and can only be made in the physical environment (Evers, 2011). Especially large and medium-sized cities are of interest because these areas consist of a mix of both large stores, which have better coordination possibilities to extend their opening

hours, and other type of leisure facilities. Therefore it might be interesting to reconsider current opening hours in order to compete with online retailers (Hoofdbedrijfschap Detailhandel, 2011).

Opening hours
It might be beneficial for consumers to have increased freedom in choosing their shopping times. But less is known about the consequences of a shift in retail opening hours on consumer shopping and leisure behaviour. In the Netherlands, already a huge amount of facilities are opened during evening hours, think about supermarkets which extended their opening hours by the new shopping hours regulation in 1996, but also sports facilities, restaurants and cinemas. The opening up of retail facilities in inner city centres can have a significant impact on shopping habits, motivations and behaviours resulting in a change in consumer lifestyles and the Dutch society as a whole possibly resulting in economic growth, employment and welfare gains for consumers by extended opening hours (Dijkgraaf & Gradus, 2004).

METHOD
Especially since the current Dutch retail market is structurally becoming demand-driven, it is important to investigate consumers' preferences in order to broaden the chances of existing retailers and investment companies before the situation will even get worse. Therefore a stated choice experiment is conducted.

Stated choice modelling, introduced by Louviere and Hensher in 1982 and Louviere and Woodworth, in 1983, is a method applied in order to investigate consumers' preferences and market shares regarding hypothetical alternatives. By presenting different mutually exclusive future alternatives, or scenarios (composed by means of experimental designs), respondents are asked to choose the scenario they consider best, a first-preference choice task (Hensher, 1994). Scenarios consist of different attributes and attribute levels. Influential attributes on shopping location choice are distinguished and elicited by literature research, keeping in mind that shopping should be as convenient as possible otherwise people will not visit the inner city centre but will buy elsewhere. Varying attribute levels are combined through an experimental design. All attributes included in this study will have three levels and each level gives information about the part-worth utility. In order to have feasible attribute levels within the range of current experience and believability (a primary consideration), unambiguous attribute level labels are assigned. For this research the following attributes and ordinal levels are distinguished:

- *Retail offer in three types:* An influential and frequently mentioned aspect distinguished by several researchers is the selection of shops, or the assortment, in other words: the completeness of the retail offer. Especially fashion and department stores, multimedia and sports are seen as main triggers attracting consumers to a city centre. In this research, the retail offer is linked to opening hours by three types of shops. Shops in the **fashion** and luxury segment, consisting of department stores, clothing and fashion-, footwear and leather goods-, jewellery and optics, household and luxury items-. **Beauty** shops, marketing personal care goods. Media and **leisure** shops offering items in sports and games, hobby, media, antics and art. By the fact a three-level attribute contains more information than a two-level attribute, 6:00 PM and 10:00 PM are chosen as extreme ranges; 8:00 PM is chosen as intermediate level.

- *Parking tariffs:* Because of increased mobility during the last decades, prices of parking facilities become more and more of interest. Parking tariffs have to be proportional to the retail offer and will influence the service area of a city. It is interesting to investigate the influence of parking tariffs in evening hours on shopping behaviour and mode of transport used.

  In terms of attribute levels, parking tariff will be normal, which means the prices are the same as for the day-period, 50%- discount, or for free.

Besides, context variables are used for the choice sets; the shop type-variables and the parking tariff together are included in the alternatives and choice tasks, as shown in table 1.

Attribute		Level
Opening hours	Fashion	6:00 PM
		8:00 PM
		10:00 PM
	Beauty	6:00 PM
		8:00 PM
		10:00 PM
	Leisure	6:00 PM
		8:00 PM
		10:00 PM
Parking tariff (after 6:00 PM)		Free
		50%
		Normal

Table 1: Attributes and –levels

By fractional factorial design, twenty-seven alternatives are selected ensuring main effects and first order interaction effects between the first three attributes (closing hours of shops) can be estimated independently. Initially, all possible pairs of the twenty-seven alternatives are used to create choice sets. However, attribute levels of one alternative may outperform the other alternative's attribute levels. Therefore some choice set combinations were seen as less realistic and are precluded from the design. As a sampling strategy, those choice sets are presented randomly to respondents by using an online questionnaire-system. The questionnaire is designed according to the sub-questions:
- *'What is typical shopping behaviour of visitors in inner city areas of medium-sized Dutch cities?'*
- *'What are ideal opening hours and parking tariffs, and how would these opening hours and parking tariffs influence consumer behaviour?'*

With the first part of the questionnaire, current shopping behaviour is investigated. The second part of the questionnaire consists of investigating changes in behaviour by presenting new situations to respondents, followed by five choice set combinations consisting of two unlabelled alternatives and a 'no-choice' alternative. Consumers are asked for their preferences concerning shop opening hours and parking tariffs. The questionnaire is ended with examining demographics. Respondents are gained from Panelclix and snowballing. Data will be analysed using Multinomial Logit Models and Binary Logistic Regression.

The focus of the study will be on the Brabantstad network consisting of the province of Noord-Brabant and the cities Breda, Eindhoven, Helmond, 's-Hertogenbosch and Tilburg. The Brabantstad network aims at becoming a strong internationally competitive and sustainable growing urban network.

FINDINGS

Considering the sub-questions *'What is typical shopping behaviour of visitors in inner city areas of medium sized Dutch cities?'* and *'What are ideal opening hours and parking tariffs, and how would these opening hours and parking tariffs influence consumer behaviour?'* the following aspects are noticed. Most of the respondents visit the city centre between once a month and once per quarter; where younger respondents shop more frequent then elder and women shop more frequent than men. Weekend-days and the shopping night are most popular moments for shopping. The city centre is mostly visited from home, by car and an average visit takes between one and two hours where part-time employees and unemployed shop longer than fulltime workers, students and pensioners. Also females stay longer and visit the city centre more often for fun than males; a higher percentage of males visits the city centre always for efficiency reasons. Regarding opening hours, respondents in general do not have a clear opinion on opening hours and parking tariffs, also respondents are neutral towards opening hours of beauty shops. When the dataset is defined by age, more detailed insights are gained.

Figure 1: Parameter estimation divided for three age groups

Group Young *(229 respondents)* LL_M: -999.92 LL_0: -1257.91 Rho^2: 0.21
Group Middle *(245 respondents)* LL_M: -1232.32 LL_0: -1345.80 Rho^2: 0.08
Group Old   *(262 respondents)* LL_M: -1272.49 LL_0: -1439.18 Rho^2: 0.12

As can be concluded from figure 1, for the youngest group (respondents below 30 years), fashion opening hours are most important. An ideal situation will be gained when all shops are open till 10:00 PM. However, the range between opening hour utilities for 6:00 PM and 8:00 PM is larger as compared to the range between 8:00 PM and 10:00 PM. Meanwhile, respondents above 30 years value parking tariffs higher, probably because they visit the shopping centre more by car than younger respondents. In terms of type of shops or product categories: clothing and accessories, footwear and leather are the most popular products shopped for in inner city centres.

From here, it follows logically that preferences for specific types of shops concerning extended opening hours do exist as asked by the main research question:

'How do extended opening hours of different types of retail facilities in medium-sized city central shopping areas influence consumer behaviour, and what role do parking tariffs play in this context?'

An extension in opening hours of one of the three types of retail facilities (fashion, beauty and leisure) do all influence consumer shopping behaviour in terms of shopping later and shopping longer, with a relatively large influence of opening hours till 8:00 PM, see table 2. Besides, occupation has effect on those aspects and shopping longer is also dependent on gender. Thereby, gender has an influence on visit frequency. In terms of opening hours, only fashion shops do affect visit frequency; later opening hours result in a higher probability that consumers will shop more often. This finding especially applies to young people (age <30 years), and females (gender) tend to visit the city centre more often, although the difference between 8:00 PM and 10:00 PM is negligible. Parking tariffs might influence consumers to visit the city centre on a later moment during the day, whereby 50% discount results in a relatively higher percentage of visitors shopping later.

Variables		Basic BLR						BLR demographic variables					
		Later		Longer		Often		Later		Longer		Often	
		Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
Opening hours	FASHION1	-0.735	0.00	-0.468	0.00	-0.299	0.03	-0.755	0.00	-0.492	0.00	-0.316	0.02
	FASHION2	-0.167	0.21*	-0.096	0.45*	-0.035	0.79*	-0.184	0.17*	-0.108	0.41*	-0.053	0.68*
	BEAUTY1	-0.337	0.01	-0.333	0.01			-0.303	0.03	-0.322	0.02		
	BEAUTY2	-0.111	0.39*	-0.031	0.81*			-0.103	0.43*	-0.019	0.89*		
	LEISURE1	-0.421	0.00	-0.343	0.01			-0.387	0.01	-0.314	0.02		
	LEISURE2	-0.199	0.13*	-0.131	0.31*			-0.175	0.19*	-0.113	0.38*		
Parking tariff (after 6:00 PM)	PTARIFF1	0.370	0.01					0.394	0.00				
	PTARIFF2	0.249	0.05					0.303	0.02				
Age	< 30 years											0.506	0.00
	30-49 years											0.385	0.00
Gender	Female									0.516	0.00	0.359	0.00
Employment	Fulltime							0.758	0.00	0.29	0.05		
	Part-time							0.851	0.00	0.328	0.04		
	Student							1.176	0.00	0.331	0.05		
ASC		0.758	0.00	0.067	0.62**	-0.388	0.00	0.075	0.69**	-0.492	0.01	-0.889	0.00
Log likelihood ratio statistic		1943. 232		1965.040		1945.867		1886.177		1935.697		1917.243	
Pseudo R²			0.052		0.022		0.005		0.102		0.048		0.032

* non-significant parameters are not removed because the significant influence of the attribute as such according to the Wald-criterion
** parameters removed because of non-significance

Table 2: Parameter estimation of Binary Logistic Regression

Model application

From the calculated parameter values, consumer preferences for particular situations can be computed. Here a hypothetical city centre A is introduced. The structural utilities (V_i's) and probabilities (P_i's) for Yes: a respondent may visit the city centre later, longer or more frequent for a specific situation (1 till 6), are calculated and shown in table 3.

			City centre A					
			Situation 1	Situation 2	Situation 3	Situation 4	Situation 5	Situation 6
Predictor variables	Opening hours	Fashion	8:00 PM	8:00 PM	8:00 PM	10:00 PM	10:00 PM	10:00 PM
		Beauty	8:00 PM	8:00 PM	8:00 PM	10:00 PM	10:00 PM	10:00 PM
		Leisure	8:00 PM	8:00 PM	8:00 PM	10:00 PM	10:00 PM	10:00 PM
	Parking tariff (after 6:00 PM)		Normal	50%	Free	Normal	50%	Free
Predicted variables	Later	Structural utility (Vi)	0.28	0.53	0.65	0.76	1.01	1.13
		Probability (Pi)	0.57	0.63	0.66	0.68	0.73	0.76
	Longer	Structural utility (Vi)	-0.26			0.00		
		Probability (Pi)	0.44			0.50		
	Often	Structural utility (Vi)	-0.42			-0.39		
		Probability (Pi)	0.40			0.40		

Table 3: BLR model application

The BLR model gives information about shopping behaviour preferences and changes by introducing new situations. Here the choice to shop later, longer or more often is compared to the choice to not shop later, longer or more often. When opening hours of all types of shops are extended till 8:00 PM and the parking tariff is reduced with 50% the probability that the city centre is visited on a later time during the day is 63%. This means that 63% of the consumers may visit the city centre on a later time the day although it is not known which time. When opening hours of all types of shops are extended till 10:00 PM and the parking tariff is free 76% of the consumers may visit the city centre later, also 50% may stay longer and 40% may shop more often. Shopping frequency and duration are insensitive to parking tariff as did already become clear from table 3; here is shown that the probabilities respondents will shop longer and more often do therefore not increase by decreasing parking tariffs.

Although calculated with the same opening hours for all types of shops, it is also possible to only extend opening hours for one type of shops and predict influences on shopping behaviour. Because of the highest influence of fashion opening hours, an extension of fashion opening hours will be calculated here in table 4:

			City centre A					
			Situation 1	Situation 2	Situation 3	Situation 4	Situation 5	Situation 6
Predictor variables	Opening hours	Fashion	8:00 PM	10:00 PM	8:00 PM	10:00 PM	8:00 PM	10:00 PM
		Beauty	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM
		Leisure	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM
	Parking tariff (after 6:00 PM)		Normal	Normal	50%	50%	Free	Free
Predicted variables	Later	Structural utility (Vi)	-0.17	0.00	0.08	0.25	0.20	0.37
		Probability (Pi)	0.46	0.50	0.52	0.56	0.55	0.59
	Longer	Structural utility (Vi)	-0.77	-0.68	-0.77	-0.68	-0.77	-0.68
		Probability (Pi)	0.32	0.34	0.32	0.34	0.32	0.34
	Often	Structural utility (Vi)	-0.42	-0.39	-0.42	-0.39	-0.42	-0.39
		Probability (Pi)	0.40	0.40	0.40	0.40	0.40	0.40

Table 4: BLR model application

As can be concluded from the table 4, an extension of opening hours of fashion shops till 10:00 PM and free parking tariffs will result in a higher probability (59%) consumers that may visit the city centre later than extending opening hours of all types of shops by two hours with a normal parking tariff (57%). Less consumers will stay longer if only fashion stores open up their shops as compared to opening up all types of shops. Because fashion shops are the only predicting variables concerning shopping frequency, the outcomes for the 'often'-variable from table 4 do not diverge from the outcomes from table 3.

DISCUSSIONS

In the Netherlands, since July 2013 new national legislation ensures exemption regarding Sunday openings of retail facilities. With the recently introduced regulation, attention to the opening hours of the current saturated, and by vacancy threatened, retail landscape, is shown. For retailers, it is important to deliver value and satisfy people-based needs to gain a stronger position and to strengthen the competitiveness towards internet shopping. A questionnaire including a stated choice experiment is distributed to gain insight into current consumer shopping behaviour and changes in behaviour regarding shop opening hours and parking tariffs. Data is analysed using MNL models and binary logistic regression.

Regarding preferred opening hours, in general respondents do not have a solid opinion on opening hours and parking tariffs. Although there are differences between age groups, where especially young respondents do have a strong opinion. As can be concluded from the stated choice experiment, stores will gain a greater attractiveness when opening hours are extended from 6:00 PM to 8:00 PM or 10:00 PM. Whereby 10:00 PM is mostly preferred by respondents below 30 years; respondents from 30 years and above prefer opening hours until 8:00 PM. Especially stores in the fashion and luxury segment are influential concerning preferred choice. Also, shops in the leisure segment are sensitive to an extension. Although for the elder visitors parking tariff is the main trigger to visit a city centre in the evening hours.

When opening hours are shifted, consumer shopping behaviour will change. At least for some specific demographic groups. For example the fulltime workers and students are able to visit a city centre on another day than weekends and the shopping night; they have preferences to visit the city centre on other evenings and an extension of opening hours may influence them to shop later and longer than in the current situation. Especially for the young age group extending opening hours of fashion shops seems an interesting option to strengthen the competitiveness of medium-sized inner city retail areas; they may visit the city centre more often. The elder age groups prefer to shop more often in mornings and afternoons instead of evenings. Therefore extended opening hours will not have significant impact on their shopping behaviour. Also gender does have an influence on shopping behaviour and possibly changes in shopping behaviour, especially women are more sensitive to shopping longer and more often after opening hour extensions.

Although, an extension of opening hours in evenings and a lowering of parking tariffs is an interesting first step in improving the inner city retail areas' attractiveness and strengthen the competitiveness towards internet shopping and subsequently retail vacancy, it will not solve the entire retail vacancy problem the Netherlands is confronted with currently. However, with an opening hour extension (combined with a reduction of parking tariffs) as a first measure, the remaining retail surface may become more viable and profitable.

From this research it becomes clear that the demand side (the consumer) is positively influenced by evening shopping possibilities, although it is not known what this means for the supply side. Consumers may shop later, longer and more often, but do they spend more? Will it be cost effective for retailers, investment companies and leisure facility owners when opening hours are extended? The same applies for parking companies and infrastructure managers in terms of reduced parking tariffs. It might be interesting to investigate this economic side to know what the exact value of the measures will be.

Another aspect will be the difference between an opening hour extension or a shift in opening hours. This research focussed on an opening hour extension, although it might be more profitable for retailers to shift opening hours to a later moment the day.

Preferences are now investigated in general and for specific age groups, although occupation seems to be a more influential factor in changing shopping behaviour by extended opening hours. Besides, this research is carried out on city centre level, it could also be extended to the supporting centre level mainly used for daily needs.

ACKNOWLEDGEMENTS

REFERENCES

Barata-Salgueiro, T., & Erkip, F. (2014). Retail planning and urban resilience – An introduction to the special issue. *Cities, 36,* pp. 107-111.

Bellenger, D.N., & Korgaonkar, P.K. (1980). Profiling the Recreational Shopper. *Journal of retailing, 56,* pp. 77-92.

Detailhandel Nederland. (2013). *Winkeliers: "Proviniciale regie detailhandel nodig!".* Retrieved June 19, 2014, from http://www.detailhandel.nl/images/pdf/012_Winkeliers_-_Provinciale_regie_detailhandel_nodig.pdf

Dijkgraaf, E., & R.H.J.M. Gradus (2004). *Explaining Sunday shop policies.* Rotterdam: ODFEB.

Evers, D. (2011). *Detailhandel en beleid: een continue wisselwerking.* Retrieved October 7, 2013, from http://www.pbl.nl/sites/default/files/cms/publicaties/Detailhandel%20en%20beleid%20definitief%200711_0.pdf

Evers, D., A. van Hoorn & F. van Oort (2005), *Winkelen in Megaland.* Rotterdam/Den Haag: NAi Uitgevers/Ruimtelijk Planbureau.

Expertteam Detailhandel Noord-Brabant. (2013). *Ambitie vereist keuzes.* Retrieved September 20, 2013, from http://www.ivbn.nl/viewer/file.aspx?FileInfoID=599

Finn, A., & Louviere, J.J. (1990). Shopping-Center Patronage Models. *Journal of Business Research, 21,* pp. 259-275.

Hoofdbedrijfschap Detailhandel. (2011). *Het nieuwe winkelen.* Retrieved October 25, 2013, from http://www.hbd.nl/websites/hbd2009/files/Technologie/Rapport-HBD-het-nieuwe-winkelen.pdf

Hensher, D.A. (1994). Stated preference analysis of travel choices: the state of practice. *Transportation, 21,* pp. 107-133.

Hsiao, M.-H. (2009). Shopping mode choice: Physical store shopping versus e-shopping. *Transportation Research Part E, 45,* pp. 86-95.

Janssen, I.I. (2011). Adaptive Decision Making in Multi-Stakeholder Retail Planning. Eindhoven: University of Technology Eindhoven.

Locatus. (2014). *Persbericht – Winkelleegstand stijgt zevende jaar op rij.* Retrieved January, 2014, from http://www.locatus.com/nederland/nieuws-en-informatie/nieuws-en-pers/persbericht---winkelleegstand---jan-2014

Severin, V., Louviere, J.J., & Finn, A. (2001). The stability of retail shopping choices over time and across countries. *Journal of Retailing, 77,* pp. 185-202.

Taskforce DeeltijdPlus. (2010). *De discussie voorbij.* Retrieved September 30, 2013, from http://www.rijksoverheid.nl/documenten-en-publicaties/kamerstukken/2010/04/06/de-discussie-voorbij-eindrapport-taskforce-deeltijdplus.html

STEFANIE M.G. VAN DEN HEUVEL

Stefanie van den Heuvel was born in 1988 and grew up in a warm and protected environment. After her high school she started studying in the faculty of Architecture and Building Sciences. Besides her study, she always had one addiction: called shopping. In this project she got the opportunity to integrate her shopping-hobby with an academic research.

'There would not have been a research subject fitting me more than this, I am definitely sure about that'.

2007 – 2010   Bachelor Architecture and Urban Design (TU/e)
2010 – 2011   Courses in Urban Design and Planning Master (TU/e)
                Courses in Landscape Architecture Master (TU Delft)
2012 – 2014   Master Construction Management and Engineering (TU/e)

DUTCH SUMMARY

WINKELOPENINGSTIJDEN-VERRUIMING IN MIDDELGROTE BINNENSTEDEN
Het verkrijgen van inzicht in consumentenvoorkeuren en –gedrag
Auteur: Stefanie M.G. van den Heuvel

Afstudeerprogramma:
Construction Management and Urban Development 2013-2014

Afstudeercomité:
Prof. dr. ir. W.F. (Wim) Schaefer
Ir. A.W.J. (Aloys) Borgers
Dr. ing. P.J.H.J. (Peter) van der Waerden
Drs. J.P. (Jeroen) Verwaaijen

Afstudeerdatum:
26 juni 2014

OVERZICHT

In contrast met de kantorenleegstand zijn leegstaande winkelpanden een relatief nieuw verschijnsel in Nederland. De grootste reden voor winkelleegstand is de opkomst van de winkel online. Onze service economie is niet langer gebonden aan een negen tot vijf structuur in tegenstelling tot de winkelopeningstijden. Met het verkrijgen van inzicht in consumentenvoorkeuren met betrekking tot een verruiming van winkelopeningstijden kan de potentie van binnensteden om te concurreren met online winkels groeien. Dit zal leiden tot meer leefbaar en winstgevend winkeloppervlak.

Sleutelwoorden: Consumentenvoorkeuren, winkelfaciliteiten, openingstijden, winkelgedrag, vrijetijdsgedrag, stated choice experiment

INTRODUCTIE
Terwijl de meeste Nederlandse winkelgebieden onveranderd zijn de laatste paar decennia, verandert de huidige winkelmarkt structureel van aanbod- naar vraag-gestuurd. Consumenten zijn beter geïnformeerd, hebben verschillende mediums om dezelfde producten te verschaffen en hebben daarbij minder tijd om te gaan winkelen dan twintig jaar geleden. Ondanks de goede basis van de huidige winkelmarkt wordt het steeds moeilijker aan de veranderende vraag van de consument te voldoen. Consumenten zijn flexibel in welk winkelgebied ze bezoeken, maar zijn niet flexibel als het gaat om de tijd van een bezoek. Dit komt door de beperkte openstelling van fysieke winkels. Online winkels anticiperen hierop door 24 uur per dag open te zijn. Dat deze openingstijden wellicht soelaas bieden voor de binnenstad wordt duidelijk wanneer we ongeveer een jaar teruggaan in de tijd; toen gemeenten de macht verkregen met betrekking tot het openen van winkels op zondag. Al is het tot op dit moment niet duidelijk wat consequenties kunnen zijn voor winkelgedrag wanneer winkelopeningstijden verruimen.
Om empirisch inzicht te krijgen in deze consequenties, zijn een drietal onderzoeksvragen ontwikkeld. De hoofdvraag luidt:
'Hoe beïnvloedt een verruiming van openingstijden van winkels in de middelgrote binnenstad winkelgedrag, en welke rol spelen parkeertarieven in deze context?'
Deze hoofdvraag wordt geleid door twee sub-vragen:

- *'Wat is typisch winkelgedrag van bezoekers aan de binnenstad van middelgrote Nederlandse steden?'*
- *'Wat zijn ideale openingstijden en parkeertarieven, en hoe beïnvloeden deze openingstijden en parkeertarieven consumenten winkelgedrag?'*

Voor dit onderzoek wordt een stated choice experiment toegepast, bestaande de volgende stappen. Eerst zullen variabelen geselecteerd worden uit literatuur. Met deze variabelen worden situaties ontwikkeld. Deze situaties worden in sets van twee voorgelegd aan respondenten door middel van een online enquête en respondenten wordt gevraagd hun voorkeur te geven. Daarnaast tracht te enquête inzicht te krijgen in veranderingen in winkelgedrag. Data wordt geanalyseerd aan de hand van discrete keuze analyse en logistische regressie om vervolgens inzicht te krijgen in, en het te voorspellen van consumenten keuzes in verschillende situaties. Dit zal resulteren in interessante resultaten en discussies.

THEORETISCH KADER

De Nederlandse winkelmarkt is verzadigd. Gemeenten moeten herschikken omdat de winkelleegstand alleen maar toeneemt en toegenomen is in de laatste zeven jaren. Dit heeft geresulteerd in een leegstandspercentage van 6,9% van de totale winkelvoorraad en 7,3% van het totale winkeloppervlak in januari 2014. De komende zeven jaar zal het winkeloppervlak in stedelijke gebieden nog eens afnemen met twee miljoen vierkante meter; zeventien procent verdwijnt wellicht. De grootste reden voor deze ontwikkeling is de opkomst van het online winkelen, maar ook sociale en demografische aspecten als vergrijzing en ontgroening en de economische crisis hebben hun weerslag op het Nederlandse winkellandschap. Winkelleegstand heeft een slechte invloed op de leefbaarheid, sociale veiligheid en hierop volgend de stedelijke duurzaamheid. Stedelijke duurzaamheid wordt geassocieerd met het inspelen op de wensen van de consument. Daarom is het belangrijk te focussen op de consument en zijn almaar veranderende gedrag.

Winkelgedrag

Consumenten appreciëren een uitgebreid aanbod van grote winkels en zullen verder reizen om deze wens te vervullen. Al moeten parkeergelegenheden makkelijk bereikbaar en goedkoop zijn. Naast deze ruimtelijke aspecten zullen ook socio-demografische en socio-economische factoren zoals leeftijd, geslacht en werk een rol spelen wanneer het om winkelgedrag gaat. De vraag naar winkelcentra die een complete vrijetijdsbeleving bieden neemt toe door een afname in vrije tijd (Janssen, 2011). De mogelijkheid om online te winkelen heeft de manier waarop winkelen is opgenomen in het dagelijks leven grotendeels veranderd de afgelopen jaren hoewel fysieke winkels voordelen hebben ten opzichte van online winkels door de combinatie die gemaakt kan worden tussen winkelen en vrijetijdsbeleving zoals al eerder genoemd (Evers, 2011; Hsiao, 2009). Om te kunnen concurreren met de online winkelier is het wellicht interessant de huidige openingstijden nog eens onder de loep te nemen. Met name middelgrote steden zijn interessant omdat ze zowel grote winkels, die meer flexibel zijn met betrekking tot een openingstijden verruiming, als andere vrijetijdsfaciliteiten bieden (Hoofdbedrijfschap Detailhandel, 2011).

Openingstijden

Op dit moment zijn in Nederland al een groot aantal faciliteiten geopend 's avonds, denk aan supermarkten, sport faciliteiten en restaurants bijvoorbeeld. Het openen van winkels in binnensteden kan een significante invloed hebben op winkelgewoonte, -motivatie en -

gedrag. Dit kan op zijn beurt weer resulteren in economische groei, werkgelegenheid en welvaartsvoordelen voor consumenten en gemeenten (Dijkgraaf & Gradus, 2004).

METHODE
Een stated choice experiment is toegepast voor dit onderzoek. Door middel van het presenteren van onderling onafhankelijke toekomstsituaties wordt aan respondenten gevraagd te kiezen voor de situatie die zij het meest interessant vinden, een eerste voorkeur keuzetaak (Hensher, 1994). Een situatie bestaat uit vier attributen elk met een eigen level; gekozen uit drie mogelijke levels. De attributen zijn bepaald aan de hand van literatuuronderzoek, de levels zijn afgestemd op de huidige beleving en de volgende attributen en levels worden onderscheiden:
- *Aanbod naar drie typen winkels:* Belangrijke trekkers in binnensteden zijn modezaken, warenhuizen, multimedia- en sportzaken. Onderscheid is gemaakt naar drie type winkels. Winkels in het **mode**- en luxe segment, hier gaat het om warenhuizen, fashionzaken, schoen- en lederwinkels, juweliers, opticiens, winkels met huishoudelijke- en luxe producten. Schoonheidswinkels met **persoonlijke verzorging**sproducten, zowel in het luxe- als het dagelijkse segment. Media en **vrije tijd** winkels die producten in sport, spel, hobby, media, antiek en kunst bieden. Deze drie type winkels kunnen open zijn tot 18:00 uur, 20:00 uur en 22:00 uur (de levels).
- *Parkeertarief:* Door de toegenomen mobiliteit worden parkeertarieven steeds belangrijker. Het is vooral belangrijk dat de tarieven proportioneel zijn met het winkelaanbod. Het parkeertarief na 18:00 uur kan hetzelfde blijven als het tarief voor 18:00 uur, met 50% korting, of helemaal gratis zijn (drie levels).

De winkeltype variabelen en het parkeertarief vormen samen de situaties en keuzetaken, zie tabel 1.

Attribute		Level
Opening hours	Fashion	6:00 PM
		8:00 PM
		10:00 PM
	Beauty	6:00 PM
		8:00 PM
		10:00 PM
	Leisure	6:00 PM
		8:00 PM
		10:00 PM
Parking tariff (after 6:00 PM)		Free
		50%
		Normal

Tabel 1: Attributen en –levels

Door middel van een fractional factorial design zijn 27 situaties waarmee keuzesets gevormd worden. Deze keuzesets zijn random gepresenteerd aan respondenten in een online enquête. Deze enquête is opgebouwd aan de hand van de sub-vragen en bestaat uit drie delen. Het eerste deel richt zich op het huidige winkelgedrag; met het tweede deel wordt het toekomstige winkelgedrag onderzocht, gevolgd door vijf keuzesets, bestaande uit twee ongelabelde alternatieven en een 'geen voorkeur' optie, die samen de voorkeuren van consumenten onderzoeken; het derde deel richt zich op demografische aspecten van de respondenten. Data zal geanalyseerd worden aan de hand van Multinomiale Logit modellen en Binaire Logistische Regressie.

De focus van dit onderzoek is op het Brabantstad netwerk bestaande uit de Provincie Noord-Brabant en de steden Breda, Eindhoven, Helmond, 's-Hertogenbosch en Tilburg.

RESULTATEN

Wanneer gekeken wordt naar het huidige winkelgedrag kan geconcludeerd worden dat de gemiddelde respondent de binnenstad tussen vier en twaalf keer per jaar bezoekt, met het weekend en de koopavond als populair moment. De respondent komt over het algemeen vanuit thuis, met de auto en blijft doorgaans tussen één en twee uren. Met betrekking tot openingstijden hebben respondenten geen duidelijke mening, wanneer de dataset wordt gedefinieerd naar leeftijd wordt er een gedetailleerder inzicht verkregen. Winkels worden aantrekkelijker wanneer openingstijden worden verruimd van 18:00 uur tot 20:00 uur (respondenten boven 30) of 22:00 uur (respondenten onder 30 jaar); een ideale situatie wordt bereikt wanneer alle winkels tot 22:00 uur open zijn. Jonge respondenten (onder 30 jaar) vinden openingstijden van modezaken het meest belangrijk. Een voorkeur naar type winkels volgt logisch uit het feit dat de binnenstad het meest bezocht wordt voor kleding en schoenen. Respondenten ouder dan 30 waarderen parkeertarieven hoger met betrekking tot winkelen in de avonduren. Teruggaande naar de hoofdonderzoeksvraag:

'Hoe beïnvloedt een verruiming van openingstijden van winkels in de middelgrote binnenstad winkelgedrag, en welke rol spelen parkeertarieven in deze context?'

Drie aspecten met betrekking tot winkelgedrag zijn onderzocht, het later, langer en vaker bezoeken van de binnenstad, alle drie beïnvloedt door een openingstijden-verruiming van modezaken. Andere invloeden worden weergegeven in onderstaande tabel.

Variables		Basic BLR						BLR demographic variables					
		Later		Longer		Often		Later		Longer		Often	
		Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
Opening hours	FASHION1	-0.735	0.00	-0.468	0.00	-0.299	0.03	-0.755	0.00	-0.492	0.00	-0.316	0.02
	FASHION2	-0.167	0.21*	-0.096	0.45*	-0.035	0.79*	-0.184	0.17*	-0.108	0.41*	-0.053	0.68*
	BEAUTY1	-0.337	0.01	-0.333	0.01			-0.303	0.03	-0.322	0.02		
	BEAUTY2	-0.111	0.39*	-0.031	0.81*			-0.103	0.43*	-0.019	0.89*		
	LEISURE1	-0.421	0.00	-0.343	0.01			-0.387	0.01	-0.314	0.02		
	LEISURE2	-0.199	0.13*	-0.131	0.31*			-0.175	0.19*	-0.113	0.38*		
Parking tariff (after 6:00 PM)	PTARIFF1	0.370	0.01					0.394	0.00				
	PTARIFF2	0.249	0.05					0.303	0.02				
Age	< 30 years											0.506	0.00
	30-49 years											0.385	0.00
Gender	Female									0.516	0.00	0.359	0.00
Employment	Fulltime							0.758	0.00	0.29	0.05		
	Part-time							0.851	0.00	0.328	0.04		
	Student							1.176	0.00	0.331	0.05		
ASC		0.758	0.00	0.067	0.62**	-0.388	0.00	0.075	0.69**	-0.492	0.01	-0.889	0.00
Log likelihood ratio statistic		1943.232		1965.040		1945.867		1886.177		1935.697		1917.243	
Pseudo R²		0.052		0.022		0.005		0.102		0.048		0.032	

* non-significant parameters are not removed because the significant influence of the attribute as such according to the Wald-criterion
** parameters removed because of non-significance

Tabel 2: Parameter schattingen Binaire Logistische Regressie

DISCUSSIE

Het verruimen van openingstijden van modezaken is een interessante optie om de concurrentiepositie van de middelgrote binnenstad te versterken, in het speciaal voor de jonge respondenten onder 30 jaar; zij zullen de binnenstad vaker bezoeken. Vrouwen zijn gevoeliger wanneer het langer en vaker winkelen betreft; werkenden bezoeken de stad eerder later en langer dan niet-werkenden. Hoewel het verruimen van winkelopeningstijden naar avonduren (in combinatie met een verlaging van parkeertarieven) zeker een interessante eerste stap kan zijn om de concurrentie met het

online winkelen en de leegstandsproblematiek aan te gaan, zal niet het hele probleem opgelost worden. Wel zal de overgebleven winkeloppervlakte leefbaarder en winstgevender zijn. Om het aantrekkelijker te maken voor retailers is het interessant een verschuiving van openingstijden in plaats van een verruiming te onderzoeken, en ook de economische gevolgen voor retailers zullen in kaart gebracht moeten worden. Gaan consumenten bijvoorbeeld meer besteden wanneer ze later, vaker of langer gaan winkelen?

DANKBETUIGINGEN

REFERENTIES

Dijkgraaf, E., & R.H.J.M. Gradus (2004). *Explaining Sunday shop policies.* Rotterdam: ODFEB.

Evers, D. (2011). *Detailhandel en beleid: een continue wisselwerking.* Retrieved October 7, 2013, from http://www.pbl.nl/sites/default/files/cms/publicaties/Detailhandel%20en%20beleid%20definitief%200711_0.pdf

Hoofdbedrijfschap Detailhandel. (2011). *Het nieuwe winkelen.* Retrieved October 25, 2013, from http://www.hbd.nl/websites/hbd2009/files/Technologie/Rapport-HBD-het-nieuwe-winkelen.pdf

Hensher, D.A. (1994). Stated preference analysis of travel choices: the state of practice. *Transportation, 21,* pp. 107-133.

Hsiao, M.-H. (2009). Shopping mode choice: Physical store shopping versus e-shopping. *Transportation Research Part E, 45,* pp. 86-95.

Janssen, I.I. (2011). Adaptive Decision Making in Multi-Stakeholder Retail Planning. Eindhoven: University of Technology Eindhoven.