Customer choice behavior in the delivery phase of online grocery shopping

a stated choice experiment on customer' preferences for home delivery and pick-up points

Smeets, B.M.M.

Award date:
2017

Customer choice behavior in the delivery phase of online grocery shopping

A stated choice experiment on customer' preferences for home delivery and pick-up points

B.M.M. Smeets
December 2017

TU/e Technische Universiteit Eindhoven University of Technology

Customer choice behavior in the delivery phase of online grocery shopping: A stated choice experiment on customer' preferences for home delivery and pick-up points

Eindhoven, December 2017

Author
B.M.M. (Brigitta) Smeets
Studentnumber: 0775920
smeets.bmm@gmail.com

Real Estate Management & Development
Faculty of Architecture, Building & Planning
Eindhoven University of Technology

Supervisors
Dr. ir. A.D.A.M. (Astrid) Kemperman
Dr. ir. R.A.C.M. (Rob) Broekmeulen
ir. A.W.J. (Aloys) Borgers

Preface

This paper presents my graduation project for the master Real Estate Management and Development at Eindhoven University of Technology at the department of Real Estate Management and Development. The graduation project researches online grocery shopping, with a focus on the delivery phase. Literature research and a survey consisting a stated choice experiment provide more insight into the decision making process in the delivery phase of customers shopping groceries online in an urban or rural area.

First of all I want to thank my supervisors for all their advice and expertise: Astrid Kemperman for all her guidance and time, Aloys Borgers for his guidance and knowledge of random utility theory, and Rob Broekmeulen for his critical view and many advises for references. Many thanks to Mandy van de Sande for helping me out with making the survey available online in the Bergsystem. I want to thank my partner Pierpaolo Bagnasco for his programming skills, which made things so much faster and easier. Also thanks to all my respondents who took the time to fill out my survey.

Last I want to thank my family and friends for supporting me during the process of my graduation project. I found it very interesting and I enjoyed working on it. I hope you will enjoy reading it.

Britt Smeets

Eindhoven, December 2017

Summary

The aim of this research is to provide information for retailers to improve and optimize the usage of pick-up points, in a way that the customer is more satisfied and likely to choose this delivery option. A lot of research has already been done on online shopping, but online grocery shopping is a quite recent development and there are still a lot of gaps in the literature. In particular, regarding the delivery phase of online grocery shopping, only a few references could be found. By getting a better understanding of the choices of customers regarding choosing a pick-up point or home delivery, companies may use the results to modify their services.

Online shopping is a disruptive innovation in the retailing, and it caused a significant change in shopping behavior of customers. In the early days of online shopping, it was assumed to play a minor role, but over time online shopping got a complementary role, next to offline shopping. When customers shop they go through different stages, also called ''a customer journey''. Five stages of the customer journey are used to identify the shopping process: awareness, consideration, purchase, loyalty/retention, and advocacy. Different platforms (online/offline) can be used during each stage.

To answer the research question: ''What determinants influence the choice of customers for pick-up points versus home delivery during the customer journey of online grocery shopping and is there a relation with the socio-demographics, psychographics and the general online shopping behavior of the customer?'', a survey with a stated choice experiment is conducted to ascertain preferences of respondents for the delivery phase of online grocery shopping. Stated choice experiments are able to examine preferences of customers in a hypothetical situation. Also the relative importance of other factors which have an influence on the choice behavior can be detected. Hypothetical choice situations are presented to decision makers, in a systematic way. Each respondent needed to choose several times which alternative in a certain choice set they preferred the most. By observing the choices the respondent made, it has been determined how the respondent's choice changed along with the change of attribute levels.

In the choice experiment respondents were split in two groups: respondents living in a rural area and respondents living in an urban area. Furthermore, two scenarios were considered: doing weekly groceries and hosting a dinner party. The stated choice experiment consists of three alternatives. The decision maker could choose between: pick-up point, home delivery or as a no preference option: going to the store themselves. The alternative pick-up point and home delivery have different attributes and attribute levels. These attributes are based on the literature study and the current offered services by Dutch supermarkets. For home delivery the attributes are: fastest delivery, delivery times, delivery costs and delivery timeslots, and for pick-up the attributes are: fastest pick-up, opening times pick-up, pick-up costs, and travel time from home.

The stated choice experiment was conducted in the form of an online survey and was spread online and via flyers with a link to the website where the survey could be entered. There was no set focus group. Most respondents live in Eindhoven (urban area) or in the province of Limburg (rural area). Following CBS (2000) the biggest groups of residents in cities are young people between 20 and 35. In the rural areas, there are fewer young people. In rural areas, the average persons in a household are 2.6, while it is 1.9 for urban areas. This is partly due to the fact that there are more one-person

households in urban areas, which constitute almost half of total households. In rural areas persons live more often in a household with more than one person. In total, 594 respondents completed the questionnaire, but data from 57 respondents could not be used since the answers had suspicious patterns which strongly suggested random selection. Other respondents filled in all choice situations in less than a minute, which was also eliminated. Therefore, the data of only 537 respondents have been used. The survey differentiates between respondents living in an urban area and respondents living in a rural area. 319 of respondents live in an urban area and 218 respondents live in a rural area.

The questionnaire consists of four parts. In the first part, the psychographic characteristics of the decision maker are measured by showing statements. The decision maker needs to fill in how they feel about these statements. The answers vary from totally disagree to totally agree. The psychographics are described by six categories: shopping enjoyment, time pressure, innovation, loyalty, motivation to conform, and price consciousness (Konuş et al., 2008). In the second part, some questions are asked about the previous online shopping experiences of the decision maker since this can be of importance to the way decision makers perceive online grocery shopping. How often, and for how much money, do decision makers buy products online? The product categories used are fashion items, electronics, and food items. Before the decision maker continued with the stated choice experiment, it needed to be determined if the decision maker lived in a rural or urban area. The third part is a choice experiment which presents 8 choice profiles for each scenario. In the choice experiment, two scenarios are considered, doing weekly groceries and hosting a dinner party. The decision maker is asked to make a choice between pick-up and home delivery, by clicking on the preferred choice. After this decision, they are asked if they would prefer going to the store themselves if the possibility were there. The choice experiment consists of 9 different attributes. Two of them are the attribute travel time: travel time living in an urban area and travel time living in a rural area. The survey adapts to the living area of the respondent. The initial design considers 4 attributes with 2 levels and 5 attributes with 4 levels. In this study, pick-up points are compared to home delivery and the option to go to the store yourself. After completing this choice experiment the fourth part consists of filling in the decision makers' socio-demographics: gender, age, education, income, job, household situation, available transport, travel time, and living area. Previous studies have found connections between these socio-demographics and online shopping.

Differences have been found for the socio-demographics when comparing the sample of an urban area and the sample of a rural area. In particular, there are more females in a rural area, more people working part-time in a rural area, and fewer students. Conversely, there are more people working full-time in an urban area. Furthermore, in a rural area, more people are in the 40+ age group, while in urban areas more people are in the 20-40 years. With regard to household and income, there are more people with a high income and households with children in the rural areas, while fewer for the urban areas, which are characterized by the presence of more one-person households.

To estimate the choice behavior of decision makers in the delivery phase of online grocery shopping with the found data three discrete choice models are used. All three models have advantages and disadvantages. The multinomial logit (MNL) model is widely understood and often used in similar experiments. It is relatively simple to compute, but it does not consider the heterogeneity of the data

(Train, 2009). The latent class (LC) model can estimate latent classes, as the sample is split into classes with similar utility weights of attributes. By making classes with differences between these classes, the LC model considers heterogeneity. However, it is not very flexible, since it can only model non-continuous heterogeneity. Since the LC model determines classes, it is possible to look at the differences between these classes. On the other hand, the mixed logit (ML) model is more flexible and models observed and unobserved heterogeneity. Although this model provides extensive information, it is intensive to compute (Train, 2009).

With the MNL model, the utility weights of 8 attributes were estimated. Those utility weights showed that for the scenario of weekly groceries in an urban area, the option of home delivery is preferred over the option of a pick-up point. Decision makers preferred low delivery costs for home delivery, and pick-up points opened 7 days a week with an adjacent supermarket with no pick-up fee for pick-up points. The utility weights for the scenario of hosting a dinner party in an urban area show that the home delivery option is preferred over the pick-up point option. Decision makers preferred next day delivery and low delivery costs for home delivery, and low pick-up costs for pick-up points. The utility weights for the scenario of weekly groceries in a rural area show that home delivery is preferred over a pick-up point option. Decision makers preferred next day delivery with low delivery costs for home delivery, and no pick-up fee and a short travel time (less than 20 minutes) for pick-up points. The utility weights for the scenario of hosting a dinner party in a rural area show that the option of home delivery is preferred over pick up. Decision makers preferred low delivery costs and small delivery timeslots for home delivery, and low pick-up costs and a short travel time (less than 20 minutes) for pick-up points. Overall, going to the store themselves is most popular among respondents, for all MNL models it is preferred over both home delivery and pick-up.

With the LC model, a three-class model for the urban area considering the scenario of weekly groceries was estimated. For the rural area considering the scenario of weekly groceries, a two-class model is estimated. For the scenario of a dinner party, no classes could be estimated. The classes found for the rural weekly groceries scenarios show significant differences for age group, the frequency of buying food items online, regularity of buying fashion items online, and familiarity with online weekly grocery shopping. The classes found for the urban weekly groceries scenario, show significant differences for gender, frequency of buying online, frequency of buying electronics online, percentage of fashion items shopped online vs offline, familiarity with buying fashion items online, familiarity with buying electronics online, familiarity with online grocery shopping, familiarity with online weekly grocery shopping, and familiarity with online grocery shopping for a special occasion.

Segment 1 of respondents living in a rural area considering the scenario of weekly groceries, seems to be a pretty traditional group, they are not particularly adaptive and most respondents are mid-aged. Hence the name "Rural traditional shoppers" is given. Segment 2 seems to be more adaptive towards online shopping, and online groceries shopping. Most respondents are young. Hence the name "Rural modern shoppers" is given.

Segment 1 of respondents living in an urban area considering the scenario of weekly groceries, seems to be a pretty traditional group, they are not particularly adaptive and most respondents are females. Hence the name "Urban traditional shoppers" is given. Segment 2 seems to be more adaptive towards online shopping, and online groceries shopping. This group seems to be flexible,

not the most adaptive not the most conservative. Hence the name "Urban flex shoppers" is given. Segment 3 shows as only segment a positive constants for pick-up point and home delivery, which indicates this group prefers pick-up and home delivery over going to the store themselves. This group seems to embrace change since it prefers online grocery shopping over traditional grocery shopping. Hence the name "Urban innovative shoppers".

By taking indirect relationships into account in rural areas, people with a high income, between 25 and 50 years, with a family and a full-time job are the most willing to shop groceries online. These people regularly shop fashion online. By taking indirect relationships into account in urban areas, people younger than 25 years or between 25 and 50 years, highly educated, working full-time and living in a one-person household are the most willing to shop groceries online. They are frequent online shoppers, if they are into buying electronics online they do it quite frequently and they shop a lot of their fashion items online instead of in-store.

The ML model also estimated the utility weights of the attributes, but this time the standard deviations were also estimated, which makes it possible to spot heterogeneity. The ML model of an urban area considering the scenario of weekly groceries shows heterogeneity in the attributes: opening time of pick-up point, fastest delivery, costs for pick-up and delivery cost. Considering the scenario of hosting a dinner party, heterogeneity is found in the attributes: delivery times, delivery costs, delivery timeslots, fastest pick-up, and costs of pick-up. The ML model of a rural area considering the scenario of weekly groceries shows heterogeneity in the attributes: delivery costs, delivery timeslots, opening time pick-up point, costs pick-up, and travel time. Considering the scenario of hosting a dinner party heterogeneity is found in the attributes: fastest delivery, delivery costs, and travel time.

There are several managerial implications. If retailers want to boost their usage of pick-up points in an urban area, they should provide pick-up points which are open 7 days a week (8.00-22.00) with an adjacent supermarket where it is possible to pick-up online ordered groceries below a cost of €5. If retailers want to promote doing weekly groceries online, regular customers should be offered free pick-up; for special occasions, customers are willing to pay for pick-up. If retailers want to boost their usage of the service, home delivery the costs should not be more than €5 and next day delivery should be a possibility.

The people interested in online grocery shopping following this experiment seems to be quite small, not more than 30% of the population. If retailers want to boost the usage of pick-up points in a rural area, they should provide pick-up points where it is possible to pick-up online ordered groceries below a cost of €5, within a range of a maximum travel time of 20 minutes from customers' homes. If retailers want to promote doing weekly groceries online, regular customers should be offered free pick-up, for special occasions customers are willing to pay for pick-up. If retailers want to boost their usage of the service home delivery the costs should not be more than €5, next day delivery should be a possibility and delivery timeslots of max 4 hours should be offered, preferably even 2 hours.

The focus of retailers should be on the rural modern shoppers, the urban flex shoppers, and urban innovative shoppers. Which means they should focus on younger grocery shoppers and shoppers who are used to ordering products online. They should definitely not forget the male grocery shoppers since men tend to be more into online grocery shopping if they grocery shop. Customers

who ordered online before, and the frequent users are way more likely to do it again, so stimulating them with discounts or personal attention as well offline as online can be very useful. Combining services can be a good idea for companies who own as well online grocery shops as electronic or fashion shops online. Since this makes it easier to reach the group who is most interested. Also advertising on fashion or electronic sites can help to reach this group.

Contents

INTRODUCTION

1. Introduction

1.1 Motivation

The retail market is an interesting part of the real estate market in which new developments are taking place. An important development is the increase of online shopping, which changed the market (Grewal et al. 2004, Morganti et al. 2014), and the way of shopping in city centers (Weltevreden, 2007). The Netherlands belongs to the top 5 countries with the most online shoppers in Europe (Eurostat, 2017). Customers use not only the physical store to shop but also online shops. This development together with an economic recession led to vacancy in city centers' shopping areas.

There are continuous developments in every stage of the online shopping process, from need recognition to the actual delivery of the product and the feedback on the product in use. For all those stages there are a lot of unknown factors and improvements possible to make processes more efficient. Therefore it is really interesting to do research into these new aspects of online shopping.

Specifically, there are a number of factors involved with online shopping. Customers can use several devices to enter the online shopping market (e.g. laptops, tablets and smartphones) and the way to sell products is totally different compared to the physical stores, since the products cannot be experienced in real life (van Delft, 2013). For this reason customers switch between on and offline shopping quite often. They tend to use both channels during their customer journey. For example, customers use the online platform to inform themselves about certain products which they are interested in, but for the actual buying they go to a physical store. Using both channels during the shopping process or both channels at the same time is called omni-channel shopping (van Delft, 2013). If customers eventually decide to buy a product online, the product needs to be delivered to the customers. Traditional delivery at home is the most known delivery method, but other delivery methods such as pick-up points are becoming more and more popular (Morganti et al., 2014).

1.2 Background

Nowadays some retailers struggle with their existence, due to several trends in the retail market. The economic recession caused a drop in the expenditures of customers, and the innovation of internet brought new players to the market (Van Strien & Wierenga, 2009). The internet, mobile technology and social media are rapidly changing the shopping behavior of customers as noted in the previous section. Information can be shared more easily which leads to a higher expectation for the services offered in an offline store (Quix et al., 2011). Another trend is the aging of the population as the average age of people is becoming higher (Iyer & Eastman, 2006). This is changing marketing strategies of some retaillers (Schewe, 1988). Since this population group (people older than 55) is growing, and their willingness to shop online is becoming higher it can be interesting to focus on this group for retaillers (Iyer & Eastman, 2006). Although, the biggest group of online customers are generally highly educated, young, affluent and professionals (Naseri & Elliot, 2011), it can be interesting for retailers to also offer products which are catered to older people online.

The five socio demographic factors that appear to be the most important determinants of online shopping behavior are occupation, gender, income, age and education (Naseri & Elliot, 2011).

Environmental factors are also important determinants, since there is a difference in shopping behavior between customers in a rural and in an urban area due to stores being more difficult to reach in rural areas (Syndy, 2015).

Customers buy not all types of products online, it depends on the product and how convenient it is to order it online. The three most popular product groups bought online are: clothing, telecom and information technology and the three most popular service groups are: flight tickets/hotels, package travel/private transport and insurance (Ecommerce News Europe, 2015). Product types can be divided into three categories: food, non-food and services.

1.2.1 Customer journey

The retail market is the market of the sale of products or services to customers, who go through a process before actually making the purchase. The cycle of the interaction between the customer and the retailer is called the customer journey or customer engagement cycle (Nenonen, et al., 2008; Mangiaracina et al., 2009; Ertell, 2010; Sashi ,2012). It can also be described as the decision making process of the customer from need recognition to the end of the purchase and even after sales service (Engel et al., 1995). There are different views on ways to divide the customer journey into stages. Nenonen et al. (2008) divide the process in five stages: the orientation stage, the approach stage, the action stage, the depart stage and the evaluation stage. Mangiaracina & Brugnoli (1970) divided the process also in five stages but in a different manner and more specified on the ecommerce customer journey: site entering and landing, catalogue browsing and product discovery, product presentation, cart management and order setup and checkout process. The most traditional one also has five stages: awareness, consideration, purchase, loyalty/retention and advocacy (Ertell, 2010; Sashi, 2012). These stages, because they are the most traditional and known ones, will be used in this report to explain the customer journey of online shopping.

There are advantages associated with buying on the internet that are probably one of the reasons for the fast growth of online shopping. One of these advantages is that online shopping compared to offline shopping has lower search and transaction costs and time savings. Customers are able to shop faster and have more choice, as there is a wider selection available online. Comparing prices is way easier, which makes it easier for the customer to order the product at the merchant who offers the product at the lowest price (Koyuncu & Bhattacharya, 2004). This has a positive influence on the consideration stage. Besides the competition on offering the lowest selling price of products, almost half of the online stores offer free return shipping. If the return possibility is considered as easy, customers are more likely to buy at the same online store again (Saleh, 2016). Hence this has a positive effect on the purchase stage, as customers have limited willingness to pay more for home delivery. Research showed that the inconvenience of grocery shopping does not influence the future shopping intentions of the customer, nor the willingness to pay (Teller et al., 2006; Hübner et al., 2016). When customers buy an item online they are more likely to return it than if they bought the item offline in the shop (Saleh, 2016). Possibly because the look and feel of a product cannot be known before, since the product is not experienced by customers in real life.

1.2.2 Pick-up points

As discussed before, there are several possibilities to deliver products after the actual buying of the product in an online store. Customer surveys and market analysis show that the delivery services

offered by e-retailers are one of the fundamental factors influencing a customer's decision to shop with them (Limayem et al., 2000; Morganosky & Cude, 2000; Park & Kim, 2003; Morganti et al., 2014). One of the possibilities is home delivery. However, the customer is not always at home and will not be able to receive the product at any time. This failed delivery, because a customer is not home, is called the last mile problem (Morganti et al., 2014: Hübner et al., 2016; Iwan et al., 2016). The last mile delivery is the delivery of the 'last warehouse' to the actual home of the customer. Often the customer cannot choose the delivery time of the product, e.g. Bol.com always delivers next day. Due to the last mile inefficiency of home delivery, companies face a higher price for these deliveries. This might lead to higher costs for customers as well.

There are several new delivery methods, some already adopted, some still in the testing phase. Amazon is doing research on a delivery method that enlists regular people to drop off packages when they are on their way to their destination. This idea is focused on urban areas (Bensinger, 2015). The main problem with this delivery method is that the package is not picked up at Amazon or the people who are enlisted for the drop off do not take the job seriously or even keep the package themselves (Kenneally, 2015; Kline, 2015).

Another delivery method tested by Amazon is the delivery by unmanned drones. This method has been used before by DHL to ship medicine to a North Sea island, and in general they are successfully used for delivery of packages to remote locations. However, there are restrictions on the weight and the size of a package (Kenneally, 2015).

Parcel boxes are also a new development. A parcel box is a secure box at the home of a customer attached to the house itself or external fittings. With a unique code it is possible to access the parcel box. The main problems of parcel boxes are, the probability that the boxes become a target for vandalism, and the size restrictions which makes them unsuitable for big packages (Kenneally, 2015).

Two other solutions have already been broadly adopted: automated parcel stations, a station equipped with lockers where customers can pick up packages with a unique code, and pick-up points, which are places with a parcel drop-off and pick-up service. Indeed the delivery costs are lower when products are picked up at a pick-up point, since the risk of missed delivery is avoided (Morganti et al., 2014). These two alternatives can be offered by online retailers, who outsource it to transport operators or shipping companies. The customers' demand for flexible delivery and the companies' need to optimize the last mile delivery are combined in these two alternatives (Morganti et al, 2014).

In this paper the focus is on pick-up points. The pick-up point network in Europe is at the moment rapidly expanding. The Netherlands is one of the countries with this rapidly expanding network, as in two years' time the number of pick-up points increased almost sevenfold (Syndy, 2015). For new retailers on the market starting with pick-up points is easier and cheaper compared to offering home delivery. In the Netherlands there is a pick-up point available for 95% percent of the customer within a range of 4 kilometers from home (DHL, 2017 ; Hübner et al. 2016). In total there are more than 5800 pick-up points spread over the country. Following Paazl (2016) about 4% of the packages of online ordered goods end up at a pick-up point after failed first delivery and for 4,6% of the packages customers make the initial choice to pick-up at a pick-up point instead of other delivery methods.

Pick-up points have several advantages: if delivery at home fails, the customer can collect the package locally at a pick-up point instead of at a depot or terminal, which is probably further away (McLeod et al., 2006: Van Duin et al.,2016); higher customer satisfaction because of the possibility of flexible delivery (Edwards et al., 2010); usage of a pick-up point maintains secure delivery (McLeod et al., 2006) and the impact on the environment could be less, due to fewer additional vehicle trips for the delivered package (Edwards et al., 2010; Van Duin et al., 2016). However, the impact on the environment can also be negative, since the customer needs to make a trip to the pick-up point. The trip made to a pick-up point can also be a trip with more purposes since pick-up points are not always only for pickup, often they are located in combination with other services, like supermarkets or post offices. The opening hours of a pickup point makes them flexible since pickup is possible during this whole timeslot unlike the set time for delivery.

When a package is delivered at a pick-up point the customer is notified, so he/she knows that the package is available at the pick-up point and is ready to be collected. The customer can collect the parcel at a pick-up point by showing a proof of identity (McLeod et al., 2006). The main advantage of a pick-up point is that all the parcels are delivered, there is no risk on failed delivery. The distance traveled by the transport company to the pick-up points could result in more costs (since the actual trip is longer) than a redelivery of that parcel to the customers home (Hübner et al., 2016). Following the case description of Mcleod et al. (2006), the use of pick-up points is more efficient than home delivery if the failure rate of home delivery is around 20%. In the paper of Boyer et al. (2009) it is shown that the miles per customer decrease as the customer density increases. Therefore, the related delivery costs decrease as customer density increases. However, in the research of Hübner et al. (2016), a strong relationship is found between a high failure rate of home delivery for zip codes with high densities and a lower failure rate of home delivery for zip codes with low densities. Therefore it is very important to consider all the related costs, i.e. the cost of rework for the second/third time deliveries.

The more mature the company is the more they are expanding the reach of their pick-up points, since they also want to reach the less populated rural areas. But following the study of Syndy (2015) ‘’the home delivery reigns in densely populated big cities, with high average purchasing power, while pick-up points do best in ‘spread territories’, where home delivery is too costly for retailers”. This research discusses pick-up points in urban areas as well as in rural areas.

1.2.3 Conceptual framework

Based on the background of the study, a conceptual framework is developed, see Figure 1.1. An overview of the customer journey is shown, with the influence of external factors. The conceptual framework is more detailed for the purchase stage, which corresponds to the delivery phase, where this paper is focusing on.

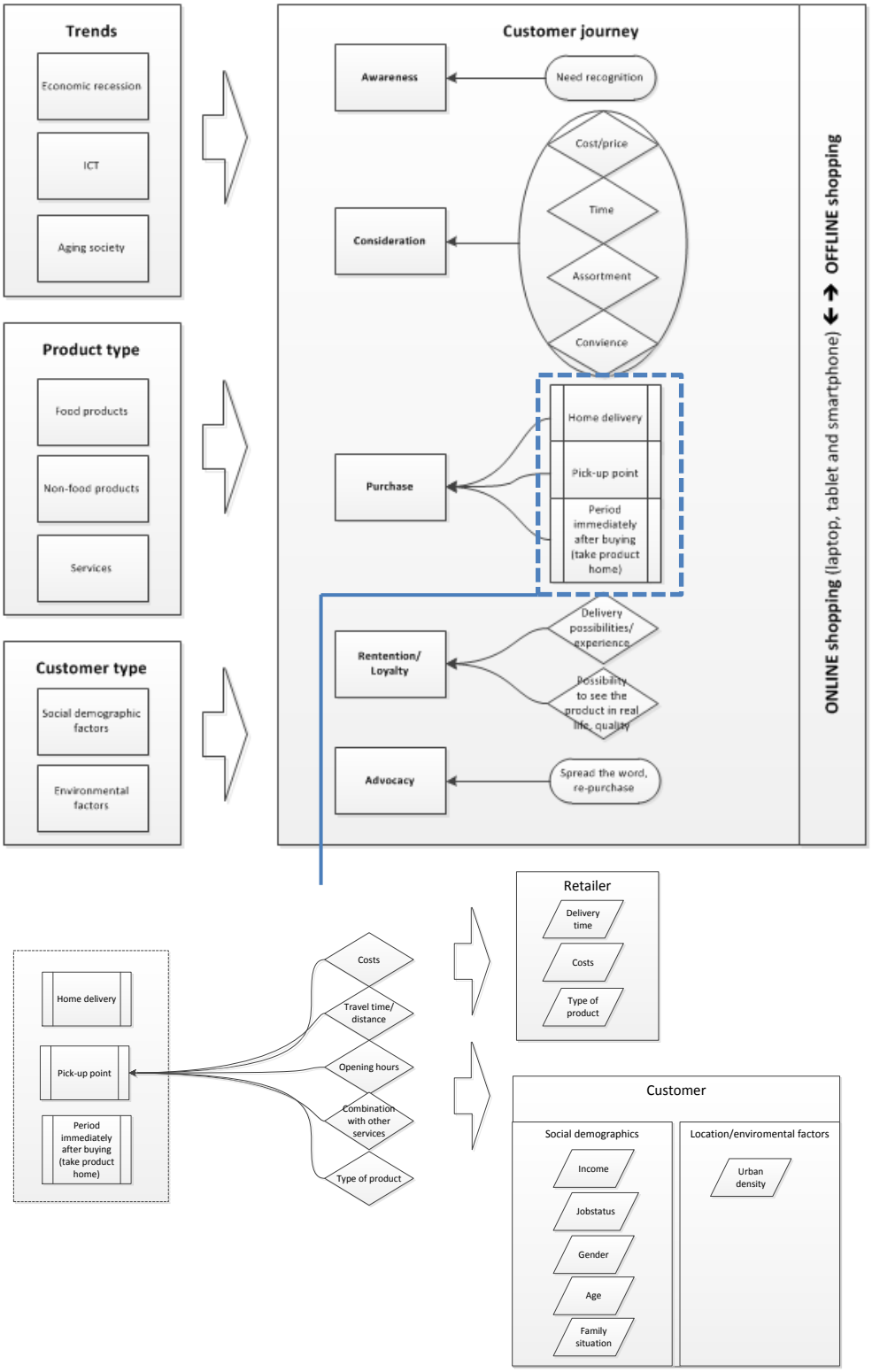


Figure 1.1: Conceptual framework

1.3 Objectives and research questions

Based on the motivation and background, this research focuses on the online shopping experiences for customers with the delivery option pick-up points as focal point. The conceptual model in figure 1.1 gives an overview of what has been discussed before. The main question of this research is:

''What determinants influence the choice of customers for pick-up points versus home delivery during the customer journey of online grocery shopping and is there a relation with the socio-demographics, psychographics and the general online shopping behavior of the customer?''

This results in the following aim: provide information for retailers to improve and optimize the usage of pick-up points, in a way that the customer is more satisfied and likely to choose the delivery option pick-up points.

In order to answer the research question, the following sub-questions must be addressed first:

- *Which of the determinants: costs, travel time/distance, opening hours and combination with other services, influence the likelihood to choose pick-up points or home delivery as a delivery option and to what degree?*
- *Which socio-demographic characteristics explain the likelihood to choose pick-up points or home delivery as a delivery option and to which extent do they explain the choice behavior?*
- *Which psychographic characteristics explain the likelihood to choose pick-up points or home delivery as a delivery option and to which extent do they explain the choice behavior?*
- *Which general online shopping behavior characteristics explain the likelihood to choose pick-up points or home delivery as a delivery option and to which extent do they explain the choice behavior?*
- *What advice can be given to companies concerning to pick-up points and home delivery, to match the customers preferences?*

1.4 Research structure

The literature will give an overview of the characteristics of pick-up points and the trends in online shopping. Previous research will hold as a guide for what to expect if it comes to these characteristics. To measure which determinants influence the choice of customers for pick-up points versus home delivery during the customer journey of online shopping, and to see if there is a relation with the socio demographics, psychographics and the general online shopping behavior of the customer, a stated choice experiment is conducted using a survey. Choice modeling (Multinomial Logit model, Latent Class model and Mixed Logit model) will be used to estimate the data collected with the Stated choice experiment. Results will be discussed followed by the conclusions and a discussion.

LITERATURE RESEARCH

2. Literature

This chapter provides a more extensive description on the literature on online shopping, and aims to find the determinants that can possibly influence the choice of customer for pick-up points over home delivery or buying groceries in the store themselves. These findings which will be used in the experiment. These determinants are taken into account when setting up the experiment and are used as attributes and characteristics for the experiment. It is divided into seven parts: online shopping development, the customer journey, shopping and the internet, online grocery shopping, multipurpose trips and pick-up points, determinants that influence the choice for pick-up points, and conclusions.

2.1 Online shopping development

Online shopping caused a significant change in customers' shopping behavior. Products are selected from a list on a webpage instead of from a shelf. The innovation of online shopping can therefore be seen as a disruptive innovation. The following sections discuss the innovation, from how it is nowadays, to how it will probably become in the future.

2.1.1 The beginning

Catalogues can be seen as a predecessor of online shopping. Way before internet was even invented, retailers sent catalogues to the homes of customers. These catalogues made it possible to shop from your own home for the first time. By combining the idea of shopping at home, with the technical development of internet, online shopping was born. One of the first companies to open a large online shop was Amazon. They launched an online bookstore in 1995 (Sartain, 2011). This online store was able to offer a wide range of books due to no physical limitations. Books and electronics were the most popular goods to buy online. The first online grocery shopping was introduced in 2000 in France, with a drive-through formula to pick up online ordered groceries (Ecommerce News Europe, 2014).

If we look at the history of online grocery shopping in the Netherlands we find that Albert Heijn introduced a webshop in 2001 called Albert.nl. They offered products from Albert Heijn, Etos and Gall& Gall, and it was possible to order all goods at the same time (Albert Heijn, 2016). Albert Heijn was not the first with this idea. James Telesuper offered in 1996 electronical order services, where groceries could be ordered with fax or telephone and could be picked-up at fuel stations (Volkskrant, 2001).

In 2012 Albert Heijn was the first Dutch supermarket that made it possible to order from mobile devices such as smartphones and tablets with the launch of an app. They also opened the first pick-up points. The pick-up points made it possible to pick up the groceries whenever the customers wanted. Another new possibility was picking up goods ordered online at bol.com in a certain supermarket (Albert Heijn, 2016). Other supermarkets followed this example and also introduced online grocery shopping and opened pick-up points. In November 2014, Jumbo started its journey into e-grocery. In just two months, the company opened 28 pickup points. Through aggressive expansion, Jumbo plans to earn 5% of its total revenue from online sales by 2017 (Het Financieële Dagblad, 2015; Syndy, 2015). In September 2015 Picnic started as an online supermarket in

Amersfoort. Items can be ordered on the app, and for orders made before 22.00 holds that they will be delivered for free the next day, with a minimum order value of €25.- (Thole, 2017). Picnic aims at more and smaller deliveries (25 euro and up), while Jumbo and Albert Heijn aim at bigger orders (70 euro and up). By offering bulk products retailers hope to keep up with the big discounters.

Following Timmermans et al. (1991), teleshopping would only play a minor role in retailing, especially in clothing. The price was seen as the most important factor, as well as the product, the service, and the delivery. Teleshopping would only get a complementary role. Borgers et al. (1991) suggested that teleshopping would strengthen the position of the higher order shopping centers, but will detract trade from existing lower order shopping centers. An important factor for stores to focus on to strengthen their position with the entry of online shopping, besides having good prices, is branding. Rowley (2004) suggest that it is more difficult to communicate, for a brand that is not established through other channels, since there is an absence of preconceptions. Sometimes brands chose to migrate established offline brands online, e.g. TESCO or CNN, others come up with a new identity to create a fresh new image. There are several brands, which operate online which are very successful, such as Google, Ebay and Amazon. It is important to enhance the credibility of a brand, but presented differently on different channels (Rowley, 2004).

2.1.2 The future of online shopping

Online shopping is changing and will probably change even more in the future. Since there is no data available for the future, this section will make suggestions about how online shopping and the retail market will develop using quotes from people who are engaged with it on a regular basis, and I will give my own view.

Neils Sanders, managing director of Conlumino, a retail consultancy firm, has his own ideas about the future of online shopping and says: ''People just don't like waiting in for deliveries, but most are happy to pick up from their local high street" (Butler, 2012). Shipping to one point for pick up could be the solution, as Mr. Busch, chief executive of DHL Parcel Europe, said: "The more parcels you can deliver to a single location, the lower the cost" (Whelan, 2015).

Fiona Mehta, a customer says: "I much prefer to shop from the comfort of my sitting room, avoiding the crowds" "I've got more time to browse. But I work, so I can't wait at home for the delivery. This just makes sense" (Wallop, 2013). And she will not be the only one, as online shopping will become more convenient. With same day deliveries and pick-up options, we will be able to track orders real time on an app on our phone. Furthermore people are becoming more and more aware of the ecological problems, so the attention for the impact of home delivery will increase. Striving for an emission reduction, by avoiding the last mile delivery problem, will become a point of attention (Giuliano, 2013).

I think that in fifteen years we will still go to shops to buy in-store, but the weekly groceries will be totally automatized. Customers will go instore shopping for browsing through the assortments and for special and new products. There is no fun in picking for example, toilet paper or milk. We will spend our time more efficient on things we want to spend time on, it is not always a case of having no time. We just want to spend the time we have in the best possible way.

These assumptions are also based on facts found in the literature. According to Kinsey and Senauer (1996), the ultimate time-saving convenience may be home shopping. Shoppers feel time-pressed if they are shopping more often and at different shops, and they want more convenience and services so they can save time (Morganosky & Cude, 2000).

Theoretical research outcomes are not always adopted by companies because they do not want to change or because they think the way they run their company now is practical. So it is important to keep these views in mind when coming up with new ideas to improve pick-up points, as well customers as implementers (professionals) need to be in line with these ideas, otherwise they will not be implemented.

2.2 Customer journey

The customer journey, the cycle of the interaction between the customer and the organization concerning to the relationship and the actual buying, has physical and psychological aspects. In 1.2.1 the customer journey is already introduced. In this section this subject will be discussed more in depth.

The customer journey can be divided into five stages according to Sashi (2012): awareness, consideration, purchase, loyalty/retention and advocacy. The first stage is the awareness stage, in this stage the goal is to engage prospects and create the awareness of the brand. In this stage the need recognition of the customer takes place. The second stage is the consideration stage, in this stage the customer will consider the product, and will gather all the information. It is important for companies to showcase how the offered product can help the potential customer achieve their goals and why they should choose your products over the competition. The third stage is the purchase stage, it is the stage where a customer actual decides if he/she buys the product, in this stage it is important for companies to dispel any remaining doubts about the product. Part of this purchase stage is the delivery of the product to the customer: the delivery phase. The fourth stage is the loyalty stage, in this stage the customer can become engaged with a product and encouraged to repeat purchases. The last stage is the advocacy stage, if customers are happy with the bought product and become a loyal customer they can promote the product actively in their network. Companies can promote the advocacy stage for example by customer generated content or social media. If customers are unhappy with their purchase, besides not purchasing again there is a possibility they will speak badly about the product in their network. Of course companies want to avoid this as much as they possibly can.

During the customer journey it is depending on the kind of product which platform is used to shop, the product need to be suitable for online shopping (cd's, books), for other products customers prefer to shop in a click and mortar store (laptop e.g. Coolblue) or a normal physical store. Click and mortar shores are companies who have a physical and an online presence (Kalakota & Robinson, 1999). This will provide the opportunity to touch and experience the product offered online in real life.

Following this process, customers start with gathering information. This can be in conventional stores, click and mortar stores or online (van Delft, 2013). Motivations to shop include: finding the product for the best price, searching for product promotions, online shopping convenience (Park &

Kim, 2003), stimulation from the interaction with the websites, receiving personalized services, quality of the received services, perceived value, information availability (Koyuncu & Bhattacharya, 2004; To et al., 2007; Close & Kukar-Kinney, 2010; Ganesh et al., 2010). On the other hand, individuals tend to shop less online because this requires longer delivery time, and online payment involves some risk (Koyuncu & Bhattacharya, 2004).The economic recession had an influence on the motivations, as the customers tend to be more aware of price differences and try to avoid impulse purchases by comparing their future purchases before actually buying them (Hampson & McGoldrick, 2013).

2.3 Shopping and the internet

As stated before, online shopping is a growing market. There is a complementary relationship between e-shopping and city center shopping, because the internet is often used to gather information before making the purchase in an offline environment and vice versa. That is why shopping centers should try to use the advantages of both channels and have an online and offline presence (Weltevreden, 2007). The amount of online stores increased over the years: 15 thousand in 2010 to over 32 thousand in 2015 (CBS, 2016). Where in 2005 only 25% of the Europeans were online shoppers (Eurostat, 2017) this increased to 45% in 2013 (European Commission, 2013). In 2015 the percentage even increased to 53% for European citizens. This means that over ten years the online shopping market grew with over 100%, so the opportunities are big here. The Netherlands is one of the fastest growing markets for online retail in europe, 71% of the people shop online in 2015 (CBS, 2016). Online shopping is nowadays responsible for a big part of the turnover, over 520 billion euro in Europe. This means this is an estimated share of 8% of the total European turnover of retail goods. In the Netherlands this percentage is slightly higher, with 8,9% (16,1 billion). Also, in non-European countries like the United States omni-channel is well-known, but it is also appearing in Japanese retail trade in recent years (Nakamura et al, 2015).

The three most popular product groups are: clothing, telecom and information technology. And the three most popular service groups are: flight tickets/hotels, package travel/private transport and insurance (Ecommerce News Europe, 2015). The amount spent per purchase fluctuates between 100 and 500 euro. When products are bought online, they also need to be paid digitally. There are different payment possibilities, and credit card is the most used one (Zhang & Li, 2006). When payments are made online security and accuracy become critical (Yu et al., 2002). Customers have limited willingness to pay more for home delivery, as the inconvenience of grocery shopping does not have influence on the willingness to pay more, or on the future shopping intentions (Teller et al, 2006).

When customers buy an item online they are more likely to return it than if they bought the good offline (Jiang & Rosenbloom, 2005). Since the look and feel of a product cannot be known before since the product is not experienced in real life. At least 30% of all products that are ordered online are returned (Saleh, 2016). For click and mortar stores this percentage is lower with a value of 8.89% (Saleh, 2016). This difference can be explained by the fact that due to the concept of a click and mortar store the store offers a possibility of experiencing the product in real life before actually buying it. Almost half of the online stores offer free return shipping. If this return is easy customers are more likely to buy at the same online store again (Saleh, 2016). For Brick and mortar stores the

advantage of possible in-store return of goods bought online, increases for more than half of the customers the likelihood to buy products in the online store (Saleh, 2016).

2.4 Online grocery shopping

Online shopping for groceries differs from online shopping for other products. Especially because the products are consumed within a short timeframe and they do not have a long shelf life. This can have effects on the product performance as well as on the product availability.

2.4.1 Product performance

Risks concerning product performance seem particularly applicable to online grocery shopping. Grocery items like fruits and vegetables are all different, when buying online it is not possible to check the quality of the actual product, as customers would in a supermarket. They cannot see, touch or smell the product, while they generally prefer to examine the quality of these products before buying them (Baker, 2000). This can be a reason not to purchase this kind of products online. Following Dowling and Stealin (1994) the importance of this performance risk varies on the intended usage. For example, customers find it more important to have high quality grocery items in case of using them as an ingredient for an important dinner party than for regular household meal (Houston and Rothschild, 1978; Bloch and Richins, 1983; Baker, 2000; Huang & Oppewal 2006). Some retailers focus on these special occasions, they for example only offer products online during the holiday season.

2.4.2 Product availability

If customers pre-order products online and pick them up at a chosen pick-up point, the risk of product availability is avoided. Besides, assortments online are often bigger than in-store assortments. Specialty food and drinks are primarily shopped online by customers (White, 1998), to avoid the risk of going to the local store and finding out they do not have the product. Following Rob et al. (2016) funneling customer to the offline channel can be done effectively with the functionality product availability insight online. This is especially the case when it is an experience good or the customer uses both the online and offline channel but has a preference for online shopping. However product availability insight online for food products can be difficult, since there are two ways of providing the products ordered online, in-store picking and picking in a distribution center. In-store picking means that the products ordered online are collected in an actual supermarket. This makes it more difficult to keep track off the stock. For example, at the moment a customer places an order online, it can be possible that at that same moment somebody takes the last available product in store out of the shelf. A way to prevent this is a different way of picking, namely picking in a distribution center. In this center, it is easier to monitor the stock since there are no customers walking around doing groceries. At the moment in-store picking is more common, but supermarkets are exploring the options picking in a distribution center gives them.

2.5 Multipurpose trips and pick-up points

If customers shop groceries online these products need be delivered to the customer. As discussed before there are several options. The two main options are home delivery or pick-up points. If customer choose to get their online ordered groceries at a pick-up point, they need to make a trip

there. It can be convenient to make a combination between activities, which are combined in the same trip, a multipurpose trip. Therefore multipurpose trips can be seen as an important aspect in the adoption of pick-up points, since the latter can be seen as one of the additional purposes of the trip. Following Timmermans (1988), multipurpose trips can be the result of a choice process from an individual where the individual decides to make a combination between several activities. Following a study of Ren & Kwan (2009), people with low accessibility to local shopping, and people living in the north and western Europe, tend to be more adaptive to online shopping. There exists a complementary effect between online shopping and the shopping trips made by an individual (Ferrell, 2004; Farag et al., 2005; Farag et al., 2007; Weltevreden & Rietbergen, 2007; Cao et al., 2012). Ferrell (2005) says that there is only a small substitution effect of online shopping on shopping trips, although the study of Zhou & Wang (2014) states that the interaction between shopping trips and online shopping is not a pure substitution. In this study online shopping is found to stimulate shopping trips, while shopping trips tend to suppress online shopping.

Not only stops made during the work/home trip constitute a sizeable proportion of all stops, but also the multiple purpose work trip is more common than the single-purpose work trip. Following Hanson (1980), over half of the work trips involve more than one stop, and almost all stops are planned before the traveler leaves home (Hanson, 1980). Following Arentze et al. (1993), also low tendencies to make multi-purpose trips have a significant influence on the predicted destination choice. Therefore pick-up points can be or become one of these stops.

2.6 Determinants that influence the choice for pick-up points

There are several determinants influencing the customer's behavior and therefore the choice for pick-up points. The characteristics of the shopper will be discussed first. The demographics of the shoppers, their shopping orientation, and the location and environment of shoppers. Second the situational and external factors are discussed and last the service differences.

2.6.1 Characteristics of the shopper

In general, most online shoppers are highly educated, young, affluent and professionals regardless of the types of the products they purchase. Gender is the only notable exception, as Naseri & Elliot (2011) noticed there is a difference between the frequency the customers shops online between men and women (e.g. woman shop more often). Online buyers of food and groceries are more likely to be purchased by women (Naseri & Elliot, 2011). The probability of shopping online differs per customer. Customers who attend or participate in a greater number of social events are more disposed to purchase online. Also the hours worked outside the home are significantly related to internet buying in order to save time (Alreck & Settle, 2002). To conclude, the five demographics, namely occupation, gender, income, age and education appear to be the most important characteristics of the shoppers concerning their online shopping behavior (Naseri & Elliot, 2011).

Another important characteristic is the household situation, as having kids, especially of a certain age, can influence online shopping behavior. Taking care of them leaves less time for other activities, like for example grocery shopping. Therefore, feeling pressured in time can be a reason to choose for online shopping, as it is available 24/7. Research has shown that customer characteristics of internet shoppers, with concern to their general shopping orientation (Brown et al. 2003) as well as the

attitude towards internet shopping and their comfort level with internet shopping (Brengman et al., 2005), are also an important aspect in the decision making process.

Shopping orientation

Shoppers have a general shopping orientation, for both online and offline shopping. Generally, customers are divided into two different types: the utilitarian shopper and the hedonic shopper. Their shopping enjoyment differs, as utilitarian shoppers see shopping as a necessary good and something practical (Babin et al, 1994; Childers et al., 2002), while hedonic shoppers enjoy shopping and see it as fun and entertainment (Babin et al, 1994). Some researchers showed that grocery shopping was long considered as a burden, a necessary good, so it could not be hedonic (Aylott and Mitchell, 1998; Geuens et al., 2003). But not everyone agrees, as Prus (1991) and Smith & Dickinson (1994) show some evidence that many shoppers do enjoy doing grocery shopping. Konuş et al. (2008) researched the psychographic characteristics with the use of several statements sorted into six categories: shopping enjoyment, time pressure, innovation, loyalty, motivation to conform and price consciousness. A cluster of statements reflect the corresponding category.

Besides the general shopping orientation, customers also have an online shopping orientation. The general shopping orientation can of course influence the online shopping orientation. However the offline and online shopping experience do not need to be the same, since not all customers have the same experiences with offline and online and vice versa. Hansen's (2006) research investigated both experienced and inexperienced online grocery shoppers. Online grocery shoppers have a higher compatibility with online shopping and a general advantage because they are already used to internet shopping in general. So it will be less complex for them to buy groceries online, especially compared to customers who never bought products online (Hand et al., 2009).

Location and environment

There is a difference in shopping behavior between customers in a rural and in an urban area since stores are more difficult to reach in rural areas (Syndy, 2015.) Customers in urban areas are more adaptive to online shopping (Farag et al. 2005; Weltevreden & Rietbergen, 2007). Following Weltevreden (2007), there a proportionally more online shoppers in urban areas as in rural areas. However the online shoppers living in rural areas buy products online more frequently.

Rural areas are less dense than urban areas, which means that distances to stores are often larger. The distance to the store is an important factor in predicting the channel behavior of a customer. The further a customer lives from stores, the more likely it gets that the customer buys products online (Nicholson et al., 2002; Chocarro et al., 2013). Since most studies on distance-to-store took place in foreign countries, it would not be prudent to copy their levels for this research. People in the Netherlands probably experience these distances differently, since distances to shops are smaller in the Netherlands (Baydar etal., 2010; Hamrick & Hopkins, 2012;)

2.6.2 Situational and external factors

Situational factors are temporary conditions which can have an influence on the decisions made by the customer. The study of Hand et al. (2009), shows that situational factors, e.g. having a pet or problems with health or mobility, have influence on shopping behavior as well in the consideration

stage of shopping online as on the actual buying (purchase stage) online. One of these situational factors is travel mode. If a customer does not have access to a car as travel resource but only to a bike this can have influence on the willingness to travel to a pick-up point.

Also time pressure is a particularly relevant factor in this context. It can be measured as the degree to which customers consider themselves busy (Srinivasan & Ratchford, 1991). Following Alreck & Settle (2002), customers experience a positive effect on time pressure if groceries are bought online. Online, the customers are able to concentrate entirely on obtaining information and making purchase decisions. Since customers do not need to travel to a physical store, they save the time they would spent on traveling there. The trip a customer makes to a pick-up point can thus be seen as a factor that has influence on feeling time pressured, and a reason to prefer home delivery over pick-up points.

2.6.3 Service differences

Most customers perceive the service in an offline environment better than in the online one (Binder, 2014). If customers go to an offline store they get service, which holds physical aspects and personal interaction with the salesman/woman. Customers can get an immediate response on questions and they feel like shopping in-store is more reliable (Brady & Cronin, 2001). Following Alreck & Settle (2002) online shopping eliminates the availability risk of products. This does not correspond with the feeling of customers, this difference can be due to the fact that in some cases the availability of products on a website is not up-to date with the real time stock. After ordering or even at the moment of delivery at home or pick-up it will turn-out one or more products are not there.

Pick-up points are of course not equal to offline stores, but there are some similar characteristics such as personal interaction and responsiveness. These can be seen as an advantage over the alternative home delivery. Compared with in-store shopping, online shopping offers greater convenience by making shopping possible from anywhere, anytime. Moreover, the online shopping service provides customers with the opportunity of saving time by making visits to a traditional retail store, as well as making redundant the process of picking and packing products (Huang & Oppewal, 2006).

Often the same prices are charged online and instore, but customers do not prefer to pay for deliveries of everyday goods like groceries (Baker, 2000). One of the reasons for the low uptake seems to be the delivery fee that grocery retailers charge. Clark (2000) indicated that 46% of Internet users cited free delivery of large orders as the factor that most likely will entice them to use an online grocery service in the future.

2.7 Conclusion

The literature gave some interesting findings about the attributes and important factors to take into account for the experiment. The aim of this research is to provide information for retailers to improve and optimize the usage of pick-up points, in a way that the customer is more satisfied and likely to choose the delivery option pick-up points.

Online shopping is a disruptive innovation in retailing, and it caused a significant change in shopping behavior. In the beginning of online shopping is was assumed to play a minor role, but over time online shopping got a complementary role, next to offline shopping.

Five stages of the customer journey are used to identify the online shopping process: awareness, consideration, purchase, loyalty/retention and advocacy. Different platforms (online/offline) can be used during every stage. In the Table 2.1 an overview and summary is given from the most important research and their findings as described in previous sections that influence.

Table 2.1: Literature overview

Author (year)	Effect on online shopping	Region, county
Naseri & Elliot (2011)	+ High education + High income + Full-time job + High level of social connectedness - High age - Men	Australia
Ren & Kwan (2009)	- Good accessibility to local shopping	Columbus OH ,USA
Alreck & Settle (2002)	+ More work hours outside home + Having kids + More time-pressed	Mid- Atlantic region, USA
Syndy (2015)	- Good accessibility to local shopping	Europe
Hand et al. (2009)	+ More time consuming situational factors - Having access to a car	United Kingdom
Ferrell (2005)	+ High household income + Good shop accessibility + Full-time job + More time-starved	San Francisco, USA
Cao et al. (2012)	+ Higher household income + Higher education + Living at urban location + Full-time job - Enjoys shopping	Minneapolis, USA
Farag et al. (2007)	+ Living at urban location + Good accessibility shop + Enjoys shopping - Female - High income - High age	Netherlands
Weltevreden & Rietbergen (2007)	+ High education - Male - Enjoys Shopping	Netherlands
Zhou & Wang (2014)	+ Higher household income + Higher education + Living at urban location + Full-time job + Travel time (per trip) - Enjoys shopping	USA

+ Positive impact
- Negative impact

Some of these studies have contradicting outcomes, this can be due to a difference per region for example. Relevant attributes for this research are taken into account as attributes in the experiment, which will be explained in the next chapter. The relevant attributes that came out of the literature research as socio demographic characteristics are: gender, age, education, income, job, household situation, available transport, travel time, living area. For the psychographics the statements of Konuş et al. (2008) are used, which are divided into six categories: shopping enjoyment, time pressure, innovation, loyalty, motivation to conform and price consciousness. With respect to the online shopping orientation, the compatibility with online shopping is measured by gathering data about the current use of online shopping for fashion, electronics and food.

METHODOLOGY

3. Methodology

In the previous chapters the literature is discussed as a background for the experiment. However, the research question is not answered yet. Therefore, an experiment is conducted to find the determinants which influence the choice of customers for pick-up points versus home delivery during the customer journey of online grocery shopping and the possible relation with the socio-demographics, psychographics and the general online shopping behavior of the customer. This experiment collects data using an online questionnaire. The results should reflect the determinants which have influence on choosing a pick-up point or home delivery instead of doing in-store shopping. In this section the approach of the experiment is explained by discussing the steps taken to set up the stated choice experiment, the survey, the procedure and the statistical analyses.

3.1 Choice modelling

Two data collection methods for gathering data are; revealed choice and stated choice. Revealed choice is a data collection from decisions made in a real market situation by a customer, while stated choice is data collection with an experiment where the choices are not made in a real market situation but in a hypothetical situation.

Both methods have advantages and disadvantages. By adopting the revealed choice it is not possible to make estimations about future market situations with new attributes, as there is only data available with the existing attributes. By adopting the stated choice method, it becomes possible to do measurements with non-existing, hypothetical attributes.

Since the stated choice method uses a hypothetical situation, the experiment developer can control the options that can be chosen by the decision maker. The decisions are therefore more controlled and the internal validity is high (Train, 2009). The downside of this hypothetical situation is that the customer can make different choices in a real-life situation, since it's a hypothetical choice, hence it has fewer consequences. In this experiment the stated choice data collection is used.

3.2 Stated choice experiment

To gain insight in customers' preferences in the delivery phase of online grocery shopping, a stated choice experiment is conducted. Stated choice experiments are able to examine preferences of customers in a hypothetical situation. Also the relative importance of other factors which have an influence on the choice behavior can be detected. Hypothetical choice situations are presented to decision makers, in a systematic way. Each respondent needed to choose several times which alternative in a certain choice set they preferred the most. By observing the choices the respondent made, it has been determined how the respondent's choice changed along with the change of attribute levels.

Following Cao et al. (2012) and Zhou & Wang (2014) people living at an urban area are more positive towards online shopping. Hence, the respondents of the stated choice experiment were split in two groups: respondents living in an urban area and respondents living in a rural area. To determine if a respondent lives in a rural or urban area, the following question is asked (See Figure 3.1):

Do you live in an urban or rural area (choose the answer that corresponds to most to your current living situation)?

Urban	*Rural*
Living in a city	*Living in a village*
The environment consists out of buildings, roads, and landscaped nature and water	*The environment consists of a lot of open space, agriculture and nature play an important role*
A lot of facilities (like cinema, department store, high school)	*Only basic facilities (like supermarket and elementary school)*
☐	☐

Figure 3.1: Question to distinct if respondent lives in an urban or rural area

3.2.1 Attributes and attribute levels

The stated choice experiment consists of three alternatives. The decision maker can choose between: pick-up point, home delivery or as a no preference option: going to the store themselves. The alternative pick-up point and home delivery have different attributes and attribute levels. These attributes are based on previous studies and current services offered by Dutch supermarkets at the moment of setting up the experiment. Table 3.2 shows an overview of the attributes with corresponding attribute levels.

The first attribute for home delivery is delivery time. The corresponding levels are based on the actual delivery options provided by supermarkets which already deliver groceries and on a possible improvement for even faster delivery in the future. Jumbo offers next day delivery for orders made before 12 o'clock at night, and Albert Heijn delivers faster within 24 hours. The transport company PostNL already offers same day delivery service for web shops. With regard to pick-up points, delivery time is the time before an order is ready for pick-up. For both Jumbo and Albert Heijn it is only possible to pick-up next day. However, same day pick-up is also included as an attribute level, since same day pick-up is already offered by companies as TESCO in England. England has one of the biggest E-grocery markets of Europe, hence it is assumed Dutch supermarkets will follow this example in the future.

The second attribute, delivery appointment, is also based on the available data from the Dutch supermarkets which already offer home delivery and pick-up points. Jumbo delivers from 10 until 20.30h and Albert Heijn delivers from 8 until 22.30h. They both do not deliver on Sunday at the moment, but the Sunday option is included since it is something to consider in the future (e.g. PostNL offers Sunday delivery). Pick-up points of the already offered services have more extensive opening times, e.g. Jumbo also opens pick-up points on Sundays, and opening pick-up points 24/7 is an option in the future. It can be assumed that if pick-up points will be open 24/7 the service will be unmanned. Also pick-up points open for 24 hours are assumed to be stand-alone pick-up points, without an adjacent supermarket.

The next attribute is cost. Jumbo charges 6 euro delivery costs with a minimum order range of 25 euro, and 5 euro for orders over 70 euro. Jumbo also offers free delivery if you buy certain promoted products. Albert Heijn has flexible delivery costs, the prices are usually between 3.95 and 8.95 euro. The costs for pick-up at Albert Heijn are 1.50 euro with no minimum order and the costs at Jumbo

fluctuate between 1.95 and 3.95 euro. Assuming decreasing prices, there will be four attribute levels between free and 7.50 euro.

The last attribute, travel time, has four attribute levels or two attribute levels depending on the living area of the respondent. If the respondent lives in an urban area, there are two levels: less than 5 minutes from home, and 5-10 minutes from home. If the respondent lives in a rural area the attribute has 4 attribute levels: 0-10 minutes from home, 11-20 minutes from home, 21-30 minutes from home and 31-40 minutes from home.

Table 3.1: Overview of attributes and levels

Home delivery		Pick-up point	
Attribute	**Level**	**Attribute**	**Level**
Fastest delivery time	1. Same day 2. Tomorrow	**Fastest pickup time**	1. Same day 2. Tomorrow
Delivery appointment	1. Monday to Saturday (8.00-22.00) 2. 7 days a week (8.00-22.00)	**Opening hours**	1. Monday to Saturday (8.00-22.00) with supermarket 2. 7 days a week (8.00-22.00) with supermarket 3. 24 hours on weekdays, weekend regular (8.00-22.00) without supermarket 4. 24/7 and unmanned without supermarket
Costs home delivery	1. Free 2. €2.50 3. €5.00 4. €7.50	**Costs**	1. Free 2. €2.50 3. €5.00 4. €7.50
Delivery timeslot	1. Whole day 2. Half day (before or after 15.00) 3. Timeslot of 4 hours 4. Timeslot of 2 hours	**Travel time (urban)**	1. Less than 5 min from home 2. 5-10 minutes home
		Travel time (rural)	1. 0-10 min from home 2. 11-20 min from home 3. 21-30 min from home 4. 31-40 min from home

3.2.2 Experiment design

Since the attributes and attributes levels are determined in the previous section, now the experiment design can be established. The stated choice experiment consists of 9 different attributes.

Following (Hensher et al., 2015) there are two different experimental designs, full factorial design and fractional factorial design. The full factorial design uses the full design as the name also suggests. It consists of all possible combinations of attribute levels. This initial full design consists of 4 attributes with 2 levels and 5 attributes with 4 levels. To calculate the volume of this design, the number of levels of each attribute are multiplied which each other, in this case $4^5 + 2^4 = 1{,}040$ profiles. Obviously, it is impossible to show all these profiles to a decision maker. The fractional factorial design gives a solution for this problem since it only uses a fraction of the full design, an orthogonal (non-correlated) subset of profiles. Considering the attributes and attributes levels, the smallest fractional factorial design consists of 32 profiles (Appendix 1). These profiles are ordering at random to prevent any influence of the order. Each profile is a complete set of data. The design of 32

profiles is spread over 4 decision makers. Each respondent is presented 8 profiles for the first scenario and 8 profiles for the second scenario. These scenarios are described in the next section.

3.2.3 Scenarios

In the choice experiment respondents are split in two groups: respondents living in a rural area and respondents living in an urban area. Furthermore, two scenarios are considered: doing weekly groceries and hosting a dinner party.

For weekly groceries they should consider the following situation: Imagine you need your weekly groceries, they consist of food and other necessities what you can buy in the supermarket for the whole week. These weekly groceries consist as well of perishables such as fresh products such as meat and vegetables but also non-perishables like pasta and toilet paper. The volume of these groceries is equal to four boxes filled with groceries with a value of 70 euro.

And for hosting a dinner party they should consider the following situation: Imagine you are organizing a dinner party, you invited some friends over to your place and you are taking care of the food for that night. You decided to go all out with a three-course dinner and you decided to use specific food items you do not use often and non-specific products (products you use more often, for example flour). You want the best quality you can find. These ingredients are also more expensive than your normal weekly groceries. The volume of these groceries is also equal to four boxes with a value of 70 euro.

With the scenario descriptions the Figure 3.3 is shown, to give a good impression of the volume of the online order groceries.

Figure 3.2: Impression of the volumes of the online ordered groceries

3.2.4 Choice situations

In the stated choice experiment the decision maker will pick the alternative of his/her preference in a certain scenario. For each scenario they will be given two alternatives: home delivery and pick-up point. In a sub-question a ''no-preference'' option is included as: prefers to go the store themselves.

As discussed before, the attribute travel time can have two or four attribute levels depending of the living area of the respondent, therefore this attribute level is underlined in table 3.2 and 3.3. Table 3.2 shows an example for a respondent in an urban area, and table 3.3 shows an example for a respondent in a rural area. The attribute level of the attribute travel time is underlined since the

attribute level shown here depends on the living area. All the other attribute in the choice set shown have similar attribute levels. The respondent is asked to make a decision between the alternatives, home delivery and pick-up point. In a sub-question a ''no-preference'' option is included: the respondent needs to choose between the alternative home delivery and pick-up point or if they prefer going to the store themselves. Each respondent is shown 8 choice sets per scenario, so 16 in total.

Table 3.2: Example choice set respondent in urban area

Which option do you prefer….

Attributes	Home delivery	Pick-up point
Fastest delivery/pick-up:	Same day	Next day
Delivery/pick-up possibilities	7 days a week (8.00-22.00)	24/7 and unmanned
Delivery timeslot	timeslot of 2 hours	N/A
Costs:	€ 5.00	Free
Travel time	N/A	5-10 minutes from home
Your choice	☐	☐

If you had the possibility to go to the supermarket yourself, would you prefer that?

☐	I prefer the options above, online grocery shopping
☐	I prefer to go to the store myself

The choice set for respondents living in a rural area has four attribute levels for travel time instead of two attribute levels in the case of living in a urban area, which is the underlined attribute. This choice set showed in Table 3.5 is an example of a possible choice set for a respondent living in a rural area.

Table 3.3: Example choice set of respodent rural area

Which option do you prefer….

Attributes	Home delivery	Pick-up point
Fastest delivery/pick-up:	Same day	Next day
Delivery/pick-up possibilities	7 days a week (8.00-22.00)	24/7 and unmanned
Delivery timeslot	timeslot of 2 hours	N/A
Costs:	€ 5.00	Free
Travel time	N/A	30-40 minutes from home
Your choice	☐	☐

If you had the possibility to go to the supermarket yourself, would you prefer that?

☐	I prefer the options above, online grocery shopping
☐	I prefer to go to the store myself

3.3 Survey

Besides the stated choice experiment, other data about the respondent is collected. As found in previous studies socio-demographics, psychographics and the past online shopping behavior and orientation can be related to the current online shopping behavior, which is simulated in the stated choice experiment. Hence it is important to know which alternatives are chosen by which respondents, with which characteristics. The survey is conducted in Dutch, so all the questions are translated, the translations can be found in Appendix 2.

3.3.1 Socio-demographics

The levels used for socio-demographics are based on the levels that Statistics Netherlands (CBS) uses for their statistics, as this makes it possible to compare information. The education levels are based on SOI (Standaard Onderwijsindeling) from CBS. They also include the old names used in the Dutch education system. The education level can be divided into three levels: low, average and high. The net disposable income attribute levels are based on the data of CBS, and sorted into the levels: low, middle and high. The job attribute levels are the standard levels used for research: full-time, part-time, no paid job. Full time is seen as more than 32 hours working a week. The household attribute levels are based on data from CBS and Alders (2003). One-person households, more-person households and households with children are the attribute levels of household.

3.3.2 Psychographic characteristics

For the psychographic characteristics the research of Konuş et al. (2008) is used. In this research a cluster of statements have been used to measure a category. The category represents a characteristic of the respondents, for example shopping enjoyment. The psychographic characteristics are measured on a 5 point scale which ranges between totally agree and totally disagree. Table 3.4 shows categories and corresponding statements.

Table 3.4: Psychographic characteristics

Category	Statements
Shopping enjoyment	I like shopping I take my time when I shop
Time pressure	I am always busy I usually find myself pressed for time
Innovativeness	I regularly purchase different variants of a product just for a change I am one of those people who try a new product firstly just after the launch I find it boring to use the same product (or brand) repetitively. I like to try new and different products. I always have the newest gadgets.
Loyalty	I generally do my shopping in the same way The brand of the product is important for me in my purchase decisions I generally purchase the same brands.

	The place where I do my shopping is very important to me
Motivation to conform	Being accepted by other people is very important to me. I find it very boring when other people criticize my behaviors I like to have some problems that I can solve without much thinking.
Price consciousness	It is important for me to pay the best price for the product. I compare the prices of various products before I make a choice.

3.3.3 Online shopping behavior/orientation

As noted before, the online shopping orientation and behavior can have influence on online grocery shopping, so fashion shopping and electronic shopping experiences will be taken into account. The attribute product type will therefore exist of: fashion, electronics and food. Fashion and electronics are the most popular categories for online shopping following the literature (Ecommerce News Europe, 2015). On average customers shop online in the Netherlands 12.5 times per year, which is just more than once a month. For this attribute seven levels ranging from every two weeks and more often to less than once a year will be used. The average amount of money spend online per transaction in the Netherlands is equal to 80 euro. The attribute levels will range from less than 25 euro to more than 100 euro. The percentage of the total shopping time spend online vs offline is distributed in 4 equal parts of each 25 percent. Only for online food shopping the occasion of the shopping is included, because the this experiment focuses on grocery shopping in and following the literature there is a difference in shopping behavior concerning to different occasions. An overview is shown in table 3.5

Table 3.5: Online shopping behavior/orientation

Attribute	Level
Frequency	Every two weeks or more often Once a month Once every two months Once every three months Once a half year Once a year Less than once a year
Expenditure per order	0-25 euro 26-50 euro 51-75 euro 76-100 euro More than 100 euro
Percentage of total shopping time spend online vs offline	0-25 percent online 26-50 percent online 51-75 percent online 76-100 percent online
Occasion	Weekly groceries Special events Both Other

3.4 Procedure

The data is collected with an online survey. The link to this online survey is spread by handing out flyers in front of the supermarket PLUS located at the Woenselsetraat 377 in Eindhoven on 20 June and 8 July. The link was also spread on social media (Facebook, Linkedin), among friends and family, and placed in closed Facebook groups. Due to disruptions the data has been collected in two parts. The first part of the answers has been collected in June 2017, and it consists of 252 respondents. The

second part has been collected in July 2017, and it consists of 342 respondents. In total 594 respondents completed the questionnaire, but data from 57 respondents could not be used. The answers showed the same preference for a certain alternative for all 16 choices, which gave a strong impression of random answers. Probably this was due to technical issues, which caused choice sets to have no attribute levels, but show a blanc table. Other respondents completed filling in all choice situations in less than a minute, or the whole survey in a too small timespan. When testing the survey on several respondents, it was found that the completion time to properly fill in the least possible questions (some questions do not need to be filled in if respondents had no online shopping experience) was found to be about 6-8 minutes. So faster was also concerned as random answers. Therefore, the data of only 537 respondents have been used. The survey differentiates between respondents living in an urban area and respondents living in a rural area. 319 of respondents live in an urban area and 218 respondents live in a rural area.

The experiment was conducted in the Netherlands, with a focus on the city Eindhoven located in the southern part of the Netherlands, in the province Noord-Brabant. And the rural area in the south part of the province Limburg. There was no set focus group, everybody could participate in this experiment. Centraal Bureau of Statistiek (CBS) researches the population in the Netherlands. Following CBS (2000) the biggest group of residents in cities are young people between 20 and 35. The study and job possibility a city has attracts this group. In the rural areas, there are way less young people, since also a lot of them move to cities (CBS, 2000). Except the age difference between the urban and rural areas there is another big difference: the size of the households. In rural areas the average people living in a household are 2.6, while it is 1.9 for urban areas (CBS, 2000). This is partly due to the fact that there are more one-person household in urban areas, almost half of the total households. Most families with children choose to live in a rural area (CBS, 2000).

3.5 Statistical analyses

For the data analyses two programs are used. For analyzing the socio-demographics, general shopping orientation and psychographics IBM SPSS Statistics 22 is used and for the MNL, LC an ML model NLOGIT5 is used. Before the logit models can be estimated, the model needs to be converted to a code scheme with effect coding. Table 3.6 and 3.7 show the coding scheme used in this experiment. Since there are attributes with two levels and attributes with four levels, two different schemes are used.

Table 3.6 : Effect coding 4 levels

Attribute levels	1	2	3
1	1	0	0
2	0	1	0
3	0	0	1
4	-1	-1	-1

Table 3.7: Effect coding 2 levels

Attribute levels	1
1	-1
2	1

3.5.1 Random utility theory

The random utility theory is widely used for experiments. This theory is based on the hypothesis that every individual is a rational decision maker, maximizing utility relative to his or her choices (Cascetta, 2009). The theory is based on a few assumptions. The decision maker can have different choice sets according to the decision makers' characteristics. For example, if the decision maker

needs to choose a transport mode and he/she does not have a driver license, the alternative ''car as driver'' should not be included. Furthermore, the decision maker assigns to each alternative *i* in his choice set a ''perceived utility'' or ''attractiveness'' U_i and selects the alternative that maximizes this perceived utility. This perceived utility depends on a number of measurable characteristics, or attributes of the alternative and the decision maker (attributes of the pick-up point and characteristics of the customer). The perceived utility of a decision maker to alternative *i* cannot be known with certainty, thus U_i needs to be a random variable. Keeping in mind these assumptions, it is not possible to predict the decision makers' choice with certainty, but it makes it possible to state the probability of a decision maker choosing a certain alternative given a specific choice set. The probability of the perceived utility of alternative *i* to be greater than that of the other alternatives is (Train, 2009):

$$p_i = \Pr[U_i > U_j \quad \forall\ j \neq i\ ] \tag{3.1.1}$$

3.5.2 Modeling utility

Random utility can be modeled. As described before, U_i is the perceived utility of the alternative *j* perceived by a decision maker. It is assumed is that U_i can be split in two separate parts, the observed component of utility, V_i, and a residual, unobservable component, ε_i, also called error term. This gives:

$$U_i = V_i + \varepsilon_i \tag{3.1.2}$$

U_i is typically assumed to hold a linear relationship of observed attribute levels, X_{ik}, of each alternative *i* and their corresponding weights or parameters β, such that:

$$U_i = \sum_{k=1}^{K} \beta_k X_{ik} + \varepsilon_i \tag{3.1.3}$$

Where β_k represents the marginal utility or parameter weight associated with attribute *k*.

3.5.3 Discrete choice models

Discrete choice analysis is a way to explain choice behavior of a sample of individuals. Discrete choice models can be derived from utility theory. Stated choice experiments are used to measure preferences in order to explain the choices made by individuals concerning pick-up points with these discrete choice models.

To determine the choice behavior of decision makers the most used model is the Multinomial Logit model (MNL model) (So & Kuhfeld, 1995). The latent class model (LC model) is an extension of the MNL model which makes it possible to distinguish groups of decision makers based on their comparable choice behavior. The MNL model and LC model will be discussed in the next sections.

Multinomial logit model

The MNL model can be used on a decision process with more than two alternatives in the choice set. The probabilities for a MLN model are considerably simple. It has been shown, e.g. by Train (2009), that for a MLN model holds:

$$p_i = \frac{\exp(V_i)}{\sum_{j=1}^{J} exp(V_j)} \tag{3.1.4}$$

Assuming that the utility functions themselves are straightforward, the probabilities in the equation above can be computed simply by plugging in the V-components in the formula (So & Kuhfeld, 1995).

Latent class model

A popular alternative to the MNL model is a latent class (LC) model. The LC model identifies unobserved subgroups in a population. While the MNL model looks at the whole population the LC model looks at groups. These groups have their own utility weight parameters. Factors as socio demographics and psychographics can be taken into account to check their influence on the outcome. The probability that a decision maker belonging to a particular class *c* chooses alternative *i* is:

$$p_i = \frac{\exp(V_{i|c})}{\sum_{j=1}^{J} exp(V_{j|c})} \tag{3.1.5}$$

It is also important to know the performance of a model in general besides knowing the utility weights of the attributes and levels. To measure this the $LL(\beta)$and $LL(0)$ are needed. $LL(\beta)$ is the log−likelihood function at estimated parameters and is defined as:

$$LL(\beta) = \sum_{n=1}^{N} lnPn(\beta)/N \tag{3.1.6}$$

Pn(β) is the probability of the observed outcome for decision maker *n*, *N* is the sample size, and β is a *K*×1 vector of parameters (Train, 2009). $LL(0)$ is the log-likelihood function at zero parameters, if all parameters are set equal to zero. The p^2 is the most widely used, to measure the goodness-of-fit of a model. It can also be called the McFadden's Rho^2. The higher the outcome of the p^2, the better the model predicts the observed data. The p^2 has a value between 0 and 1, 1 indicates a model which predicts the observed data exactly and 0 indicates the model is no better than a model with no parameters (Train, 2009). Studies which attempt to predict human behavior tend to have a p^2 value of less than 0.5. The p^2 value is calculated as follows (Train, 2009):

$$\rho^2 = 1 - \frac{LL(\beta)}{LL(0)} \tag{3.1.7}$$

Mixed logit model

The mixed logit model (ML) is able to approximate all other discrete choice models, because of the additional parameters. A mixed logit model can model heterogeneity, by the estimation of the standard deviations for each specific utility weight (Train, 2009). By adding the standard deviations to the model, it becomes possible to notice deviations in the population.

The utility function becomes (Train, 2009):

$$U_i = (\alpha_k + \sigma_k)X_{ik} + \varepsilon_i \quad (3.1.8)$$

The β_k of the original formula 3.1.3 is replaced by α_k which represents the mean of parameters β_k and by σ_k which represents the standard deviation of parameters β_k. If the standard deviation is large there is heterogeneity present in the utility weight of the attribute level.

3.6 Conclusion

The experiment is conducted in various parts of the Netherlands with a focus on Eindhoven as an urban area, and the province Limburg as a rural area. The survey is spread online and via flyers with a link to the website where the survey can be entered.

The survey consists of several parts: The first part is the socio-demographics of the decision maker: gender, age, education, income, job, household situation, available transport, travel time, living area. The respondent is asked to choose between the options given. For example, the income is given in euro but will be converted into three levels for the data analysis: low, middle, high. The second part tries to make an estimation of the psychographics of the decision maker e.g. is a decision maker loyal to certain way of shopping. The psychographics are measured on six categories: shopping enjoyment, time pressure, innovation, loyalty, motivation to conform and price consciousness. There are 5 levels which differ between strongly agree and strongly disagree. As third part, the online shopping behavior of a decision maker is determined by asking how often, and for how much money they shop products online. The product categories used are fashion items, electronics and food items. Before the decision maker continues with the stated choice experiment it must be determined if the decision maker lives in either a rural or urban area.

The stated choice experiment consists of 8 attribute levels with corresponding attribute levels: fastest delivery, delivery times, delivery costs, delivery timeslots, fastest pick-up, opening time pick-up point, costs for pick-up and travel time. The last attribute has four levels for the decision makers in the rural area, and two levels for the decision makers in the urban area. The remaining attributes stay in both cases the same. For the stated choice experiment a fractorial design is used with effect coding. There are two scenarios: hosting a dinner party and doing weekly groceries. For each scenario the decision maker needs to make choices in 8 sets.

To estimate the choice behavior of decision makers in the delivery phase of online grocery shopping three discrete choice models are used. All three models have their own advantages and disadvantages. The MNL model is widely understood and often used in similar experiments. It is relatively simple to compute, but it does not consider heterogeneity in the data (Train, 2009). The LC model can estimate latent classes, the sample is split into classes with similar utility weights of attributes. By making classes with differences between these classes, the LC model takes into account heterogeneity. However it is not really flexible, since it can only model non continuous heterogeneity. The ML model is more flexible, and models observed and unobserved heterogeneity. This model provides extensive information, but is intensive to compute (Train, 2009).

The MNL, LC and ML models are estimated, the results are given in the next chapter.

RESULTS

4. Results

In this chapter the research question will be answered: ''What determinants influence the choice of customers for pick-up points versus home delivery during the customer journey of online grocery shopping and is there a relation with the socio demographics, psychographics and the general online shopping behavior of the customer?''. The MNL model, LC model and ML models are estimated and a demographic analysis is conducted to analyze the differences per living area. By comparing segments found in the LC model, the utility weights found in MNL models and the opportunity to take into account heterogeneity with a ML model, it is possible to draw conclusions.

First the demographics analysis will be discussed, then the outcomes of the multinomial logit model, followed by the outcomes of the latent class model and the mixed logit model. Segments resulting from the latent class model are combined with demographics and psychographics to see if there are significant relationships and whether there are differences between the segments. The segments get a corresponding segment name, which makes sense giving all the characteristics found.

4.1 Demographic analysis

The demographic analyses consists of two parts. First the percentages of the demographic characteristics are given. Second the distribution of the respondents is discussed: where do the respondents live, and who participated in this experiment. Third the relationships between demographic variables are discussed, this is important to keep in mind when drawing conclusions later on.

4.1.1 Sample demographics

The sample used for the experiments consist of data of 537 respondents. This section discusses the demographic characteristics of the respondents. All the output of the analyses done in this section can be found in Appendix 3 and 4. In Figure 5.8 the living area of respondents is shown. About 60% lives in an urban area and 40% lives in a rural area, see figure 4.1 for the spread. If there is a significant difference between the percentages of characteristics of respondents living in a rural area or urban area, this is discussed separately.

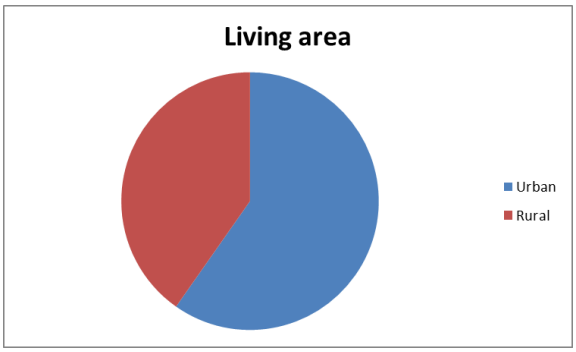


Figure 4.1: % respondents per living area

Most respondents are female, 86.2% percent of the respondents, and 13.8% is male. Figure 4.2 shows these percentages for “Mean”. This corresponds with the idea that females shop more (online), which makes them more interested to fill out a survey about online grocery shopping. Since

there is a significant difference, figure 4.2 also shows the percentages per living area. The chi-square value is 7.923 with a corresponding p-value of 0.005. In the urban area there are significantly more male respondents than in the rural area.

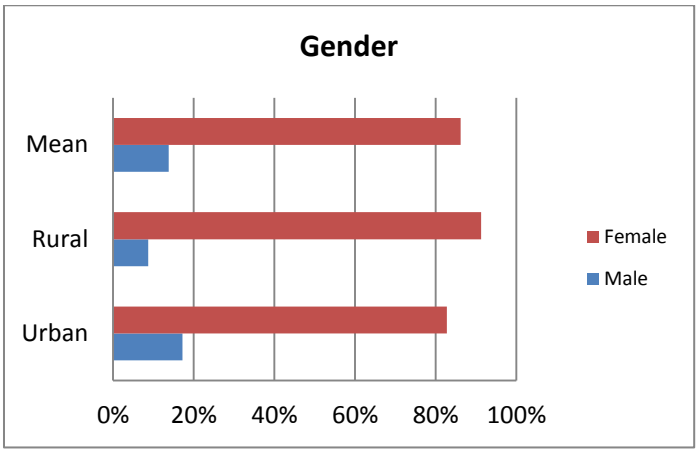


Figure 4.2: % respondents per gender

The other demographics are shown in bar charts. The job status of respondents is shown in Figure 4.3. The biggest percentage of respondents work part-time, 27.6%. Part-time is considered a job with less than 32 work hours a week. 50.5% has no paid job, possibly a lot of these respondents are stay at home moms. Since most respondents are also female, and stay at home moms and part-time workers often do the families grocery shopping, this will give a pretty good representation of the population of online grocery shoppers. 22.0% has a full-time job, which holds working 32 hours or more.

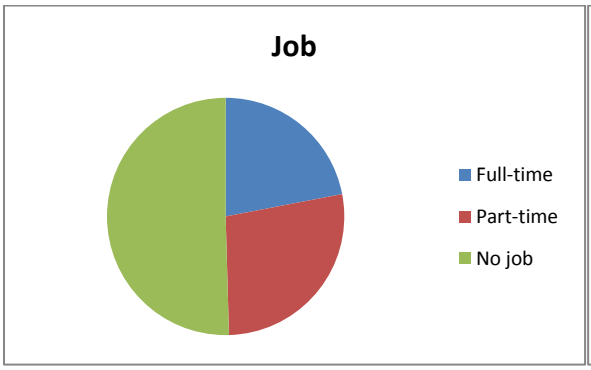


Figure 4.3: % respondents per job

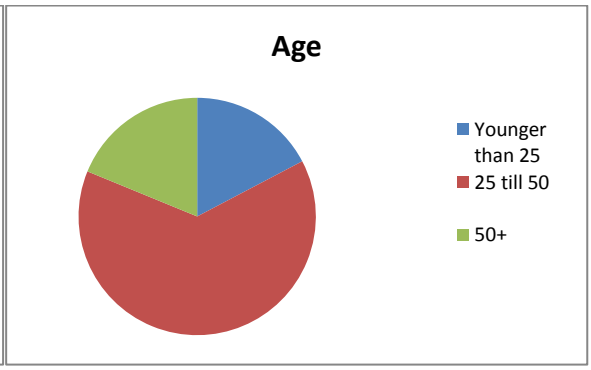


Figure 4.4: % respondents per age group

In figure 4.4 the age groups are shown. The smallest age group is younger than 25 years, 17.3%. The biggest group is aged 25 till 50 years with a percentage of 63.9%, and the second biggest group is 50+ years with a percentage of 18.8%.

Figure 4.5 shows the education levels of respondents. Most people have a medium education level, 54.0%. There are more respondents with a high education level than with a low education level, respectively 27.7% and 18.2 %. This can be due to the fact that the survey is spread in Eindhoven and via my network, which consists out of a lot of students and high educated people. There is no

significant difference between respondents living in a rural area versus an urban area for this characteristic.

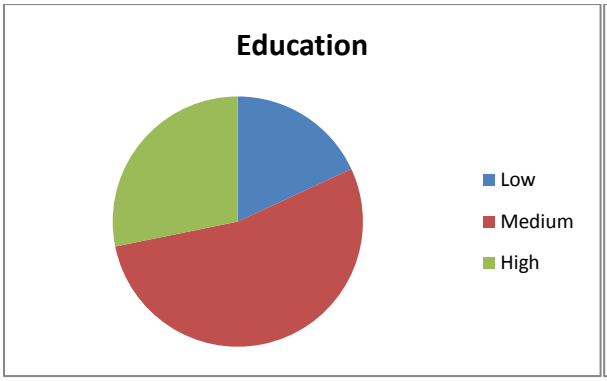


Figure 4.5: % respondents per education group

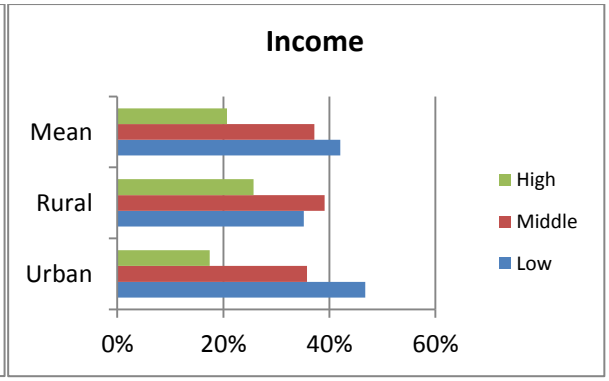


Figure 4.6: % respondents per income group

The income groups shown in Figure 4.6 show that in general most respondents have a low income, 42.1% of the respondents. 37.2% has a middle income and 20.7% has a high income level. Possibly this is related to the level ''No paid job'' of the job status before, which can indicate stay at home moms. With a chi-square of 7.303 and a corresponding p-value of 0.026 there is a significant difference between respondents living in different areas. In an urban area live more respondents with a low and medium income, while in rural areas live more respondents with a high income.

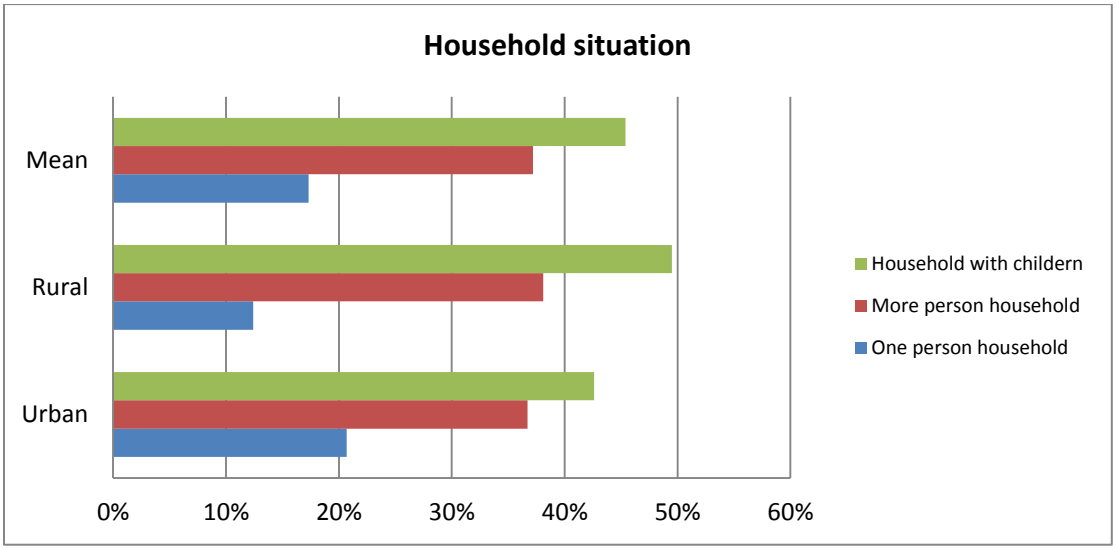


Figure 4.7: % respondents per household situation

The last demographic characteristic is the household situation, and is shown in figure 4.7. Most respondents, 45.4%, live in a household with children, while 37.2% of the respondents live in a more person household. 17.3% of the respondents live in a one person household. With a chi-square value of 6.585 and a corresponding p-value of 0.037 there is a significant difference between respondents living in an urban or rural area. In an urban area there are more one person households, while in a rural area there are more households with children.

4.1.2 Distribution of the respondents

To give more insight in the living area of the sample, the postal codes are used to make a figure. Figure 4.8 shows where the respondents live with red dots. Most of them live in the Dutch province Noord-Brabant and Limburg. Hence most respondents live in the south of the Netherlands.

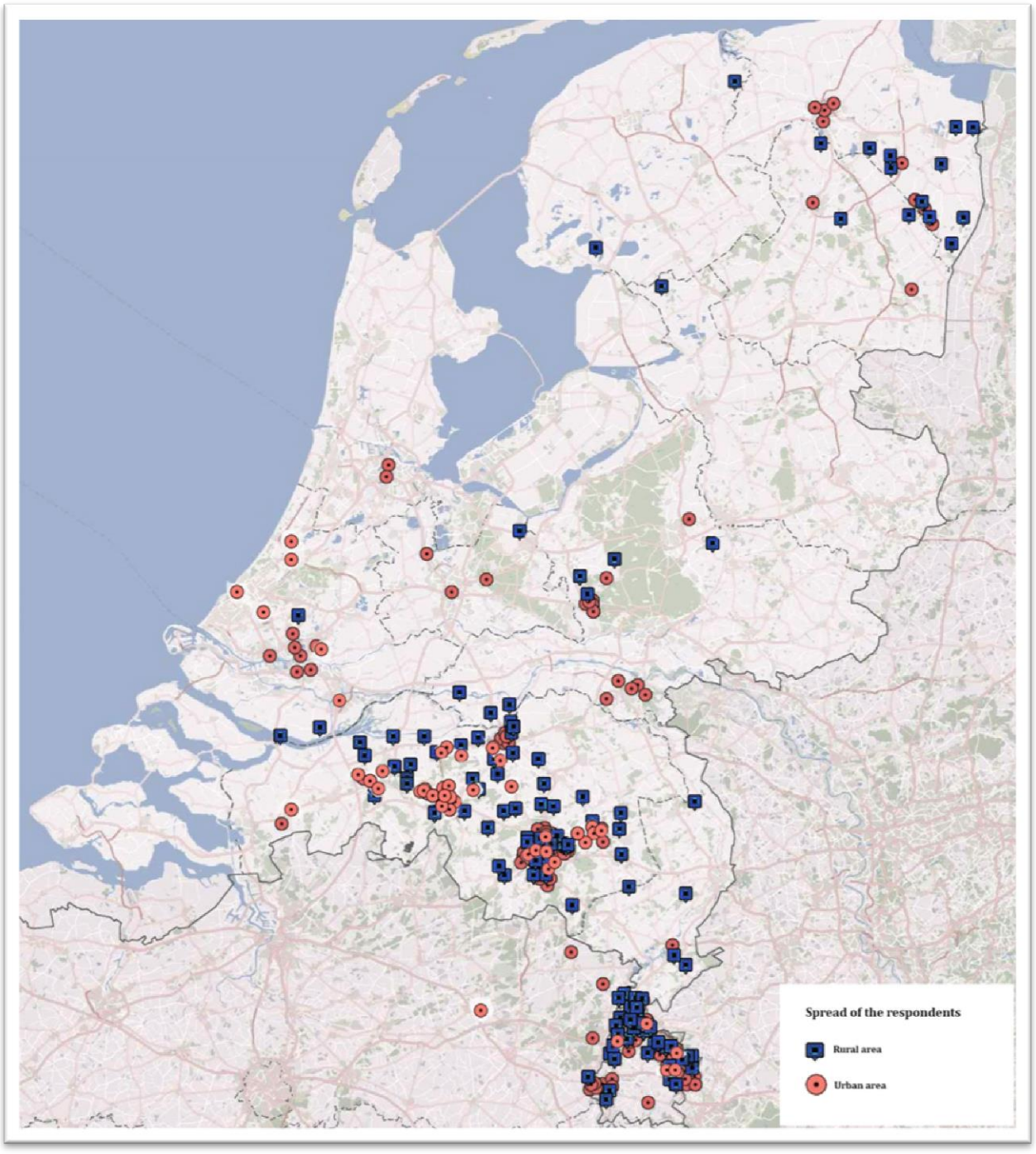


Figure 4.8: Spread of respondents

4.1.3 Relationships between demographics variables

This section discusses the results concerning the relationships between demographic variables. In order to draw conclusions it is important to keep any interdependencies into account. The same logic must be applied in order to better understand the results of the Multinomial Logit (MNL), Latent Class (LC) and Mixed Logit (ML) model. Depending on the nature of the variables, two different ways of measurement are used. If both variables are ordinal, the Spearman's Rank-order Correlation test (sp) is used. If at least one of the variables is nominal, the chi-square test (chi) is used. Table 4.1 and 4.2 shows an overview of the results, while the crosstabs are shown in Appendix 5.

The data is split into two parts, since the survey makes a split between respondents living in an urban area and respondents living in a rural area. These two groups are discussed separately. The data is grey if relationships are not significant and black when significant.

Urban

Table 4.1 shows an overview of the relationships between demographic variables of the respondents who live in an urban area. More extensive output of the analyses can be found in Appendix 5. The second column shows which test is used: the letters ''sp'' stand for the Spearman's Rank-order Correlation test and ''chi'' is the chi-square test. Except for gender-income, age-income and income-household, all the relationships are significant. If a variable does not have a significant relationship this means that the characteristics of the first variable are equally divided over the characteristics of the second variable, i.e. for gender-age, the amount of women and men in an age category is pretty equal.

Only the strong relationships are discussed. Gender and age has a significant relationship (x^2=9.360, df=2 p=0.009). More males are younger than 25 years while more females are over 50 years. Gender and education have a significant relationship (x^2= 38.284, df=2, p=0.000). Male respondents are more often highly educated then woman respondents, while females are more often medium educated or low educated. Gender and job have a significant relationship (x^2=28.184, df=2 p=0.000), since female respondents work more often part-time or do not have a paid job, while male respondents have more often a full-time job. The significant relationship between gender and household (x^2= 17.521, df=2 p=0.000), shows that male respondents live more often in a one-person household, while female respondents live more often in household with children. Probably, these female respondents are a mother.

Age and job (x^2= 16.268, df=4, p=0.000), younger respondents, less than 25 years, and respondents 50+ years do more often not have a paid job, while respondents between 25 and 50 years more often work full-time or part-time. Age and household (x^2= 29.516, df=4, p=0.000), young respondents often, less than 25 years, and respondents 50+ years live more often in a more person households, while respondents between 25-50 years more often live in a household with children.

Education and job (x^2=33.646 df=4, p=0.000) show a significant relationship, respondents with a high education work more often full-time, while respondents with a middle and low education do not have a paid job or work part-time.

Income and job are related (x^2= 54.876, df=4 p=0.000), a high income goes along with a full-time job, the middle or low incomes, are for part-time workers or no paid job. Household and job (x^2= 24.321, df=4, p=0.000), respondents living with children work often part-time or have no paid job. This can indicate that seen the fact a lot of respondents are female, they are stay at home moms, or part-time working moms. One person households work most often full-time.

Table 4.1: Relationships between demographics: urban area

	test	x2	df	p	sig?
gender-age	chi	9.360	2	0.009	yes
gender-education	chi	38.284	2	0.000	yes
gender-income	chi	3.883	2	0.143	no
gender-job	chi	28.184	2	0.000	yes
gender-household	chi	17.521	2	0.000	yes
age-education	sp	-0.125		0.021	yes
age-income	sp	0.055		0.352	no
age-job	chi	16.268	4	0.003	yes
age-household	chi	29.516	4	0.000	yes
education-income	sp	0.271		0.000	yes
education-job	chi	33.646	4	0.000	yes
education-household	chi	11.406	4	0.022	yes
income-job	chi	54.876	4	0.000	yes
income-household	chi	5.565	4	0.234	no
household-job	chi	24.321	4	0.000	yes

Rural

Table 4.2 shows the overview for the rural area. More extensive output of the analyses can be found in Appendix 5. Except for gender-age, gender-education, gender-income, age-income and education-household, all the relationships are significant. Only the strong relationships are discussed.

Gender and job have a significant relationship (x^2= 23.184, df=4, p=0.000). Males work most often full-time, while females most often do not have a paid job. The relationship of gender and household (x^2= 11.868, df=2 p=0.003), show that male respondents live most often live in a one-person household, while females tend to live most often in a household with children.

Age and job (x^2= 24.752, df=4, p=0.000) are related because respondents younger than 25 years and over 50 years do more often not have a paid job, while respondents between 25-50 years more often work part-time or full-time. The relationship between age and household (x^2= 33.461, df=4, p=0.000) shows that, respondents younger than 25 more often live in a household with children, which indicates that they still live at home or they already started their own family, or in a more person household. Respondents between 25 and 50 years most often household with children, and respondents over 50 years live most often in a more-person household.

Education and job (x^2= 13.581 df=4, p=0.009) show a significant relationship, respondents with a high education work more often full-time, while respondents with a middle and low education do not have a paid job or work part-time.

Income and job(x^2= 30.010, df=4 p=0.000) have a significant relationship: a high income goes along with a full-time job, the middle or low incomes are for part-time workers and no paid job. Income and household (x^2= 18.751 df=4, p=0.001) , respondents who live in a one-person household have more often a low income, while respondents living in a more-person household more often have a middle income. Respondents living in a household with children most often have an either a high or low income.

Household and job (x^2= 10.311, df=4, p=0.036), respondents living children work often part-time or have no paid job. This can indicate that seen the fact that a lot of respondents are female, they are stay at home moms, or part-time working moms. One person households work most often full-time.

Table 4.2: Relationships between demographics: rural area

	test	x^2	df	p	sig?
gender-age	chi	2.069	2	0.355	no
gender-education	chi	1.081	2	0.582	no
gender-income	chi	3.919	2	0.141	no
gender-job	chi	23.184	2	0.000	yes
gender-household	chi	11.868	2	0.003	yes
age-education	sp	-0.062		0.349	no
age-income	sp	0.162		0.025	yes
age-job	chi	24.752	4	0.000	yes
age-household	chi	33.461	4	0.000	yes
education-income	sp	0.412		0.000	yes
education-job	chi	13.581	4	0.009	yes
education-household	chi	8.155	4	0.086	no
income-job	chi	30.010	4	0.000	yes
income-household	chi	18.751	4	0.001	yes
household-job	chi	10.311	4	0.036	yes

Comparison urban and rural

In previous sections the relationships between variables are discussed in two different groups, respondents living in an urban area and respondents living in a rural area. Table 4.3 combines the data from both groups in an overview, so it is easy to compare.

Table 4.3: Relationships between demographics: comparison urban vs rural area

	test	x^2		p		sig?	
		Urban	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**
gender-age	chi	9.360	2.069	0.009	0.355	yes	no
gender-education	chi	38.284	1.081	0.000	0.582	yes	no
gender-income	chi	3.883	3.919	0.143	0.141	no	no
gender-job	chi	28.184	23.184	0.000	0.000	yes	yes
gender-household	chi	17.521	11.868	0.000	0.003	yes	yes
age-education	sp	-0.125	-0.062	0.021	0.349	yes	no
age-income	sp	0.055	0.162	0.352	0.025	no	yes
age-job	chi	16.268	24.752	0.003	0.000	yes	yes
age-household	chi	29.516	33.461	0.000	0.000	yes	yes
education-income	sp	0.271	0.412	0.000	0.000	yes	yes
education-job	chi	33.646	13.581	0.000	0.009	yes	yes
education-household	chi	11.406	8.155	0.022	0.086	yes	no
income-job	chi	54.876	30.010	0.000	0.000	yes	yes
income-household	chi	5.565	18.751	0.234	0.001	no	yes
household-job	chi	24.321	10.311	0.000	0.036	yes	yes

There are six differences in significance between gender-age, gender education, age-education, age-income, education-household and income-household.

The relationship between gender and age, and gender and education, is in an urban area significant, while in a rural area it is not. The survey is spread in the city Eindhoven, and my personal network, which mostly exists out of people studying at the Technical University. Most students at the technical university are males. This can cause the significant relationship between gender and age, and gender and education for urban areas, while this relationship is not seen in the rural area.

The relationship between age and education, and education and household are significant in an urban area and not in a rural area. However, these p-values are not that low, respectively 0.021 and 0.022, so the relationship is less strong. The difference can be explained with the same reason. Most students in my network living in an urban area are a young age and are highly educated, and they live alone or with more persons (probably a student house). The relationship between age and income is significant for rural and not for urban, with a p-value of 0.025. Probably, this relationship is not significant in an urban area because of the same reason named before. More respondents in the urban sample are highly educated on a young age, and will earn more often more on a young age, which disturbs the influence of age of the income in general.

4.1.4 Psychographics statements combined into categories

To measure the psychographic categories a cluster of statements is used. If a category consists of three or more statements, the Cronbach's Alpha is calculated to determine the scale reliability, for which a value of at least 0.7 is considered acceptable (Field, 2009). If a category consists of two statements, the item-total correlation scores will be calculated to determine the scale reliability, for which a value of at least 0.3 is acceptable (Field, 2009). To calculate the category value the following formula is used:

$$category = \frac{\sum statement\ scores}{Number\ of\ statements}$$

Table 4.4 : Cronbach's alpha's overview

Cronbach's alpha	Whole sample	Urban area	Rural area
Innovation	0.723	0.720	0.724
Motivation to conform	0.548	0.534	0.649
Loyalty	0.587	0.532	0.564

The Cronbach's alpha is computed for the whole sample, the part of the sample with respondents living in an urban area and the part of the sample with respondents living in a rural area. In table 4.4 the Cronbach's Alpha of the three categories with 3 or more statements are shown. More extensive output of the analyses can be found in Appendix 6.

The Cronbach's Alpha of the psychographic "Innovation" has for all samples a value around 0.72 , which indicates a high level of internal consistency and is considered acceptable. The Cronbach Alpha's of motivation to conform and loyalty are lower, which indicates a lower level of internal consistency, these values are not considered acceptable since they are all below 0.7. However, by looking at table 4.6 the deletion of the statements '' I generally do my shopping in the same way'' and ''The place where I do my shopping is very important to me'' will lead to a higher Cronbach's Alpha for all samples. Table 4.7 shows the item-total correlation between the two statements left, 0.494, 0.477 and 0.517, which is considered acceptable. For the category motivation to conform, shown in table 4.8, the deletion of the statement ''I like to have some problems that I can solve without much thinking'' will lead to a higher Cronbach's alpha as well. Table 4.9 shows the item-total correlation between the two statements left, 0.557, 0.583 and 0.518, which is considered acceptable.

Table 4.5: Cronbach's alpha - Innovation

Statements of Innovation	Whole sample	Urban area	Rural area
I regularly purchase different variants of a product just for a change	0.666	0.676	0.642
I am one of those people who try a new product firstly just after the launch	0.632	0.633	0.618
I find it boring to use the same product (or brand) repetitively.	0.705	0.686	0.728
I like to try new and different products.	0.669	0.678	0.654
I always have the newest gadgets.	0.704	0.688	0.723

Table 4.6: Cronbach's alpha - Loyalty

Statements of Loyalty	Whole sample	Urban area	Rural area
I generally do my shopping in the same way	0.589	0.534	0.651
The brand of the product is important for me in my purchase decisions	0.472	0.404	0.547
I generally purchase the same brands.	0.404	0.344	0.476
The place where I do my shopping is very important to me	0.575	0.533	0.623

Table 4.7: Item-total correlations - Loyalty

Statements of Loyalty	Whole sample	Urban area	Rural area
The brand of the product is important for me in my purchase decisions	0.494	0.477	0.517
I generally purchase the same brands.	0.494	0.477	0.517

Table 4.8: Cronbach's alpha if item deleted - Motivation to conform

Statements of Motivation to conform	Whole sample	Urban area	Rural area
Being accepted by other people is very important to me.	0.188	0.088	0.306
I find it very boring when other people criticize my behaviors	0.299	0.283	0.317
I like to have some problems that I can solve without much thinking.	0.712	0.733	0.679

Table 4.9: Item- total correlations category- Motivation to conform

Statements of Motivation to conform	Whole sample	Urban area	Rural area
Being accepted by other people is very important to me.	0.557	0.583	0.518
I find it very boring when other people criticize my behaviors	0.557	0.583	0.518

For the categories with less than three statements only the item-total correlation is estimated. If this has a value of at least 0.3, it is considered as acceptable (Field, 2009). Table 4.10 till 4.12 show that except for the category price consciousness in the sample of respondents living in an urban area, all other item-total correlations are sufficient, above 0.3. Which means these statements can be combined to measure the category. Since the value of 0.287 is quite close to 0.300 and it makes it possible to compare the urban and rural sample, it is decided to use the category price consciousness of the sample of respondents living in a urban area instead of two loose statements anyway. However, the low item-correlation will be taken into consideration when drawing conclusions, when significant results are shown with tests done with this category.

Table 4.10: Item- total correlations category – Price consciousness

Statements of Price consciousness	Whole sample	Urban area	Rural area
It is important for me to pay the best price for the product.	0.311	0.287	0.333
I compare the prices of various products before I make a choice.	0.311	0.287	0.333

Table 4.11: Item- total correlations – Time pressure

Statements of Time pressure	Whole sample	Urban area	Rural area
I am always busy	0.647	0.612	0.702
I usually find myself pressed for time	0.647	0.612	0.702

Table 4.12: Item- total correlations – Shopping enjoyment

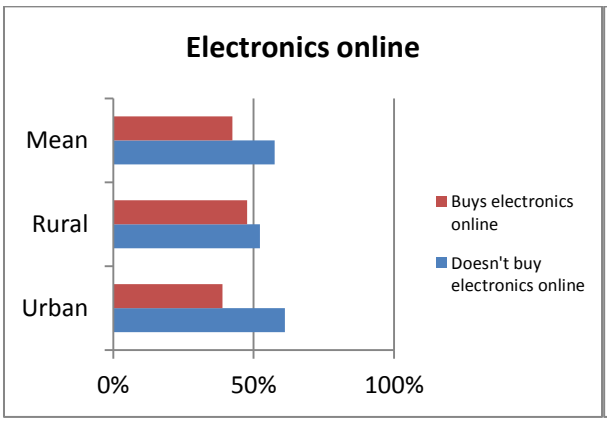
Statements of Shopping enjoyment	Whole sample	Urban area	Rural area
I like shopping	0.680	0.663	0.707
I take my time when i shop	0.680	0.663	0.707

4.1.5 Shopping orientation and psychographics per living area

Since the respondents are divided into two groups: living in an urban area and living in a rural area, there are some significant differences found between the two. The differences in socio-demographics are already discussed but there can also be differences found with concern to shopping orientation and the psychographics.

Shopping orientation

In the survey the respondents are asked to answer some general questions about their online shopping orientation. Some of these characteristics showed a significant difference between respondents living in a rural area versus an urban area. More extensive output of the analyses can be found in Appendix 7. One of these characteristics is the tendency to buy electronics online as shown in figure 4.9. This attribute has a chi-square value of 4.137 and a corresponding p-value of 0.042. Respondents in a rural area buy more often electronics online than respondents living in an urban area. Possibly this is related to the fact that respondents in a rural area live often further from stores, which makes it more convenient to order online.



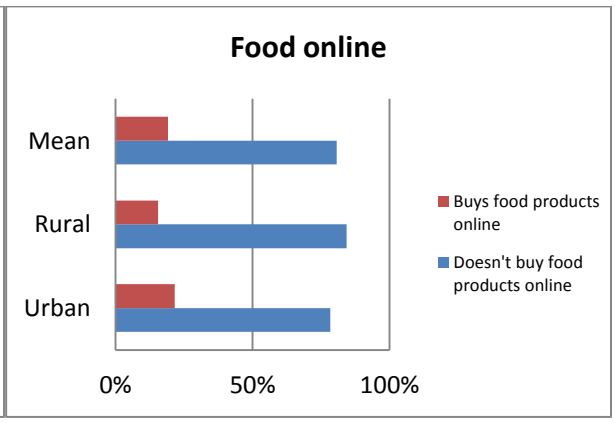


Figure 4.9: % respondents who buy electronics online Figure 4.10: % respondents who buy food online

Looking at the tendency of buying food products online (online grocery shopping) in figure 4.10, respondents in an urban area order more often food items online. This attribute has a chi-square value of 3.041 and a corresponding p-value of 0.081.

Respondents in a rural area have a higher tendency of shopping fashion items online, figure 4.11, than respondents living in an urban area. With a chi-square value of 2.994 and a corresponding p-value of 0.084, there is a significant difference. Possibly this is also related to the fact that respondents in a rural area often live further from clothing stores, and have less choice in nearby offline stores compared to online stores.

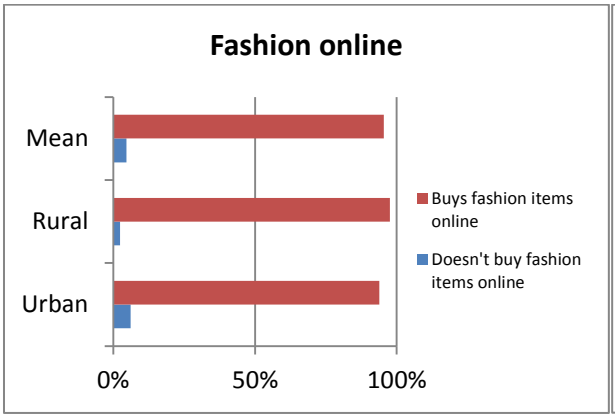


Figure 4.11: % respondents who buy fashion items online

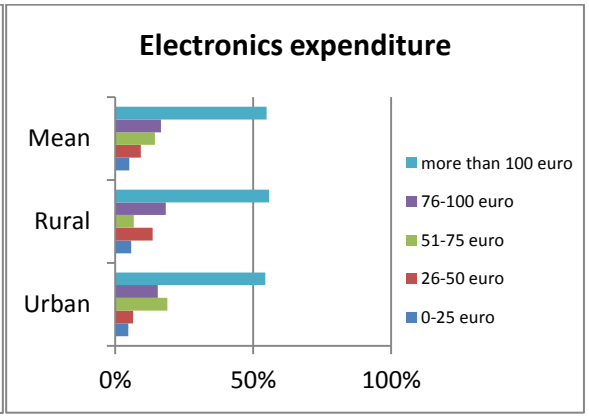


Figure 4.1: Expenditure on electrics online

Figure 4.12 shows that respondents in a rural area spent more on one order of electronics bought online, they are more likely to spent more than 75 euro. There is a significance difference with a chi-square of 10.591 and a corresponding p-value of 0.032. Looking at figure 4.13, it becomes clear that respondents in an urban area do a bigger percentages of their total shopping of electronics online. There is a significant difference with a chi-square of 7.872 and a p-value of 0.049.

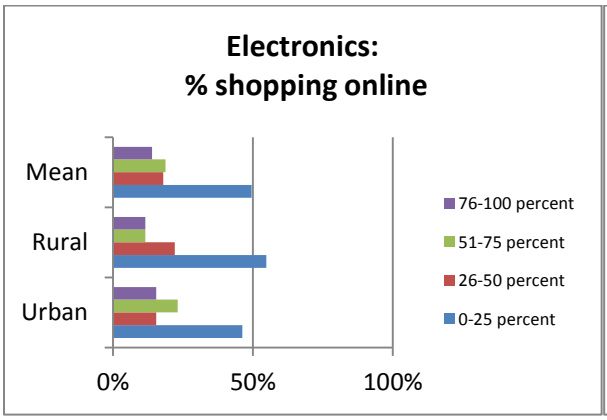


Figure 4.13 : % of shopping electronics done online

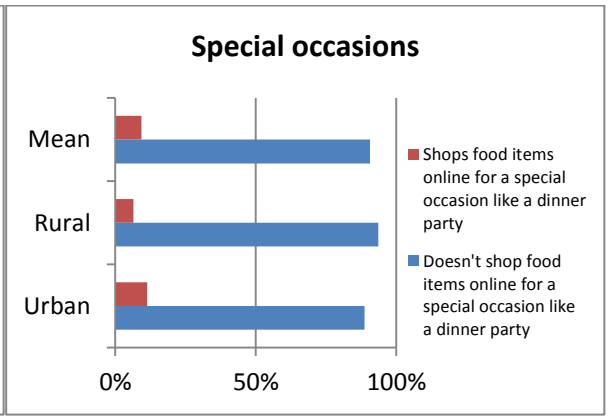


Figure 4.14: % respondents who buy food items online for special occasions

Figure 4.14 shows if respondents would shop food items online for a special occasion. With a chi-square of 3.627 and a corresponding p-value of 0.057 there is a significant difference, between respondents living in a rural area versus respondents living in an urban area. Respondents living in an urban area are more likely to buy online grocery products for a special occasion compared to respondents living in a rural area.

Psychographics

To examine if there are relationships between living area and psychographics a T-test independent sample test is conducted. The T-test shows if there is equality of variances and/or equality of means for a certain category, between an urban and rural area. Appendix 8, shows a more extensive version of the results. Table 4.14 shows that for three psychographics there are significant differences found between the respondents in both living areas: innovation, loyalty and price consciousness.

Table 4.14: T-test living area independent samples test

Category		Levene's test for equality of variances		t-test for equality of means	
		F	Sig.	df	Sig. (2-tailed)
Innovation	Equal variances assumed	.429	.513	535	.017
	Equal variances not assumed			458.932	.017
Loyalty	Equal variances assumed	3.980	.047	535	.438
	Equal variances not assumed			439.009	.445
Motivation to conform	Equal variances assumed	.082	.775	535	.115
	Equal variances not assumed			466.698	.115
Price consciousness	Equal variances assumed	8.859	.003	535	.060
	Equal variances not assumed			400.982	.070
Time pressure	Equal variances assumed	.001	.970	535	.719
	Equal variances not assumed			470.600	.718
Shopping enjoyment	Equal variances assumed	.018	.894	535	.609
	Equal variances not assumed			457.180	.611

The outcomes of the Levene's test show if there is an equality of variances of the corresponding category for different living areas. There is a significant difference of variances if the value in the column ''sig.'' is lower than 0.10. For the categories loyalty and price consciousness this is the case. To make sure the mean difference is significant the t-test for equality of means is conducted. For the categories price consciousness and innovation this is the case. Which means there is a significant difference between the means of the living areas.

4.2 Multinomial logit model

In this section the output of the stated choice experiment is analyzed with the Multinomial logit model (MNL). Nlogit5 has been used to estimate four MNL models. Respondents living in an urban area and respondents living in a rural area are split again, and it is split into two scenarios: ''Weekly groceries'' and ''Dinner party''. For the first scenario respondents are ordering weekly groceries, and for the second scenario respondents are ordering groceries for a dinner party. For each level of each attribute the utility weight (β) and significance (p) has been estimated. The higher the Utility weight/Beta (β) the higher the preference of the respondent for this level. The shown utility weight is an average of the respondents in each category.

Table 4.15 shows the log likelihoods of the estimated models LL(β), the log likelihoods of the null models LL(0) and the Rho^2. The multinomial logit models of the data concerning respondents living in an urban area have both an acceptable goodness-of-fit. For the scenario weekly groceries and dinner party the Rho^2 are respectively, 0.346 and 0.394. Also for the multinomial logit models of the data concerning respondents living in a rural area also a high goodness-of-fit is found, respectively, 0.423 and 0.466.

Table 4.15: Model performance - MNL model

Group	Log likelihood estimated model= LL(β)	Log likelihood null model = LL(0)	Rho^2
Urban weekly groceries	-1832.23106	-2803.6586	0.346486
Urban dinner party	-1698.69797	-2803.6586	0.394114
Rural weekly groceries	-1105.77118	-1915.9798	0.422869
Rural dinner party	-1022.21023	-1915.9798	0.466482

4.2.1 Urban: Weekly groceries

Table 4.16 shows an overview of the estimations for respondents living in an urban area in the scenario of doing weekly groceries online. The first thing to notice is the negative Utility weight (β) of the constants. Since these values are negative, the respondents have a preference for going to the store him/herself instead of ordering online. The home delivery constant has a utility weight of -1.70060 (p=0.0000) and the pick-up point has a utility weight of -2.03225 (p=0.0000). Since the utility weight of home delivery is higher, this option is preferred over the option pick-up point.

The utility weights show logical patterns. For instance the lowest costs have a higher β-value. With regard to home delivery, the only attribute with significant attribute levels is delivery costs. Obviously, respondents prefer the cheapest option if it comes to delivery costs. Free delivery and a delivery cost of €2.50 have a positive Beta, respectively 0.46492 (p=0.0000) and 0.17562 (p=0.0661). While delivery costs of €5.00 and €7.50 have negative Beta, respectively -0.18107 (p=0.0796) and -0.45947. In general low costs are preferred.

With regard to Pick-up points, the attribute with significant attribute levels is Opening time pick-up point and costs for pick-up. Free pick-up has a positive utility weight of 0.33202 (p=0.0018). For the attribute ''Opening time Pick-up Point'' the attribute level ''7 days a week (8.00-22.00) with adjacent supermarket'' gives a positive utility weight of 0.28568 (p=0.0077). Possibly respondents prefer Pick-up Points with an adjacent supermarket because it is not automated, but provides personal service. In general, respondents favor a pick-up point opened 7 days a week with an adjacent supermarket with a no pick-up fee (free pick-up).

Table 4.16: MNL model: urban area – weekly groceries

	Attribute	Attribute level	β	p
	Home delivery Constant		-1.70060	0.0000
Homedelivery	Fastest delivery	Same day	-0.01504	0.8938
		Tomorrow	0.01504	-
	Delivery times	Monday untill Saturday (8.00-22.00)	0.07456	0.5183
		7 days a week (8.00-22.00)	-0.07456	-
	Delivery costs	**Free**	0.46492	0.0000
		€ 2,50	0.17562	0.0661
		€ 5,00	-0.18107	0.0796
		€ 7,50	-0.45947	-
	Delivery timeslots	Whole day	0.03562	0.7163

		Half day (before or after 15.00)	0.04928	0.6128
		Timeslot of 4 hours	0.02553	0.7938
		Timeslot of 2 hours	-0.11043	-
	Pick-up point Constant		-2.03225	0.0000
Pick-up points	Fastest Pick-up	Same day	0.13741	0.3057
		Tomorrow	-0.13741	-
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	-0.04119	0.7232
		7 days a week (8.00-22.00) with adjacent supermarket	0.28568	0.0077
		24 hours a day on weekdays and in the weekends (8.00-22.00), automated and without adjacent supermarket	-0.07783	0.5078
		24/7 opened, automated and without adjacent supermarket	-0.16666	-
	Costs for pick-up	**Free**	0.33202	0.0018
		€ 2,50	0.03970	0.7281
		€ 5,00	-0.13882	0.2469
		€ 7,50	-0.23290	-
	Traveltime	Less than 5 minutes from home	-0.13629	0.3050
		5-10 minutes from home	0.13629	-

4.2.2 Urban: Dinner party

The same estimations have been done for the respondents living in an urban area in case of the scenario of hosting a dinner party instead of doing weekly groceries. Table 4.17 shows an overview of the utility weights and the p-values. The utility weights (β) of both the constants are negative. Since these values are negative, the respondents have a preference for going to the store him/herself instead of ordering online. The constant of the alternative home delivery, named home delivery constant, has a utility weight of -1.39734 (p=0.0000) and the constant of the alternative pick-up, named pick-up point constant, has utility weight of -2.55652 (p=0.0000). Since the utility weight of home delivery is higher, this option is preferred over the option pick-up point.

With regard to Home delivery, the attribute with significant attribute levels is Fastest delivery and Delivery costs. For Fastest delivery times, same day delivery has a negative utility weight of -0.38514 (p=0.004), which indicates a preference for delivery the next day (tomorrow). The attribute Delivery costs has positive utility weights for free delivery and delivery costs of €2.50, with a utility weight of respectively 0.93609 (p=0.0000) and 0.38281 (p=0.0000). While a delivery cost of €5.00 and €7.50 have a negative utility weight of respectively, -0.42010 (p=0.0001) and -0.89880. In general next day delivery, and low costs are preferred.

In the case of pick-up the only attribute with significant attribute levels is Costs for pick-up. Free pick-up has a positive utility weight of 1.23735 (p=0.000) as well as pick-up costs of €2.50 0.32610 (p=0.0204). Pick-up costs of €5.00 and €7.50 have a negative utility weight, respectively -0.49669 (0.0048) and -1.06676. In general respondents favor low pick-up costs.

Table 4.17: MNL model: urban area – dinner party

	Attribute	Attribute level	β	P
	Home delivery Constant		-1.39734	0.0000
Homedelivery	**Fastest delivery**	**Same day**	-0.38514	0.0004
		Tomorrow	0.38514	-
	Delivery times	Monday untill Saturday (8.00-22.00)	-0.10098	0.3986
		7 days a week (8.00-22.00)	0.10098	-
	Delivery costs	**Free**	0.93609	0.0000
		€ 2,50	0.38281	0.0000
		€ 5,00	-0.42010	0.0001
		€ 7,50	-0.89880	-
	Delivery timeslots	Whole day	-0.09390	0.3408
		Half day (before or after 15.00)	-0.07880	0.4276
		Timeslot of 4 hours	0.03563	0.7134
		Timeslot of 2 hours	0.13707	-
	Pick-up point Constant		-2.55652	0.0000
Pick-up points	Fastest Pick-up	Same day	-0.02114	0.9118
		Tomorrow	0.02114	-
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.05050	0.7161
		7 days a week (8.00-22.00) with adjacent supermarket	0.04716	0.7333
		24 hours a day on weekdays and in the weekends (8.00-22.00), automated and without adjacent supermarket	-0.03478	0.8090
		24/7 opened, automated and without adjacent supermarket	-0.06288	
	Costs for pick-up	**Free**	1.23735	0.0000
		€ 2,50	0.32610	0.0204
		€ 5,00	-0.49669	0.0048
		€ 7,50	**-1.06676**	-
	Traveltime	Less than 5 minutes from home	0.07264	0.6446
		5-10 minutes from home	-0.07264	

4.2.3 Rural: Weekly groceries

In previous section the results of the MNL model for the data concerning to respondents living in an urban has been discussed. In this section the MNL model for the data concerning to respondents living in a rural area are discussed. Table 4.18 shows an overview of the utility weights and corresponding p-values. The utility weight (β) of the constants is negative. Since these values are negative, the respondents have a preference for going to the store him/herself instead of ordering online. The home delivery constant has a utility weight of -1.55384 (p=0.0000) and pick-up point constant has a utility weight of -2.48287 (p=0.0000). Since the utility weight of home delivery is higher, this option is preferred over the option pick-up point.

With regard to home delivery, the attributes with significant attribute levels are Fastest delivery and Delivery costs. Concerning Fastest delivery the option ''Tomorrow'' is preferred over the option ''Same day'', with a utility weights of respectively 0.28222 (p=0.0392) and -0.28222. The attribute Home delivery costs shows a positive utility weight for free delivery and a delivery cost of €2.50, respectively 0.78658 (p=0.0000) and 0.37162 (p=0.0012). A delivery cost of €5.00 and €7.50 show a negative utility weight of respectively -0.39493 (p=0.0036) and -0.76327. In general, next day delivery with low delivery costs are preferred.

In the case of pick-up the attributes with significant attribute levels are Costs for pick-up and Travel time. For Cost for pick-up the only significant attribute level is Free delivery. Free delivery has a positive utility weight of 0.74001 (p=0.000). Travel time shows a positive utility weight for a travel time of 0-10 minutes from home and 11-20 minutes from home, respectively 0.57064 (p=0.0002) and 0.34001 (p=0.0309). For the attribute levels 21-30 minutes from home and 31-40 minutes from home a negative utility weight is shown, respectively -0.39240 (p=0.0390) and -0.51825. In general respondents favor free pick-up and a lower travel time, of 0-10 minutes from home or otherwise 11-20 minutes from home.

Table 4.18: MNL model: rural area – weekly groceries

	Attribute	Attribute level	β	P
	Home delivery Constant		-1.55384	0.0000
Homedelivery	**Fastest delivery**	**Same day**	-0.28222	0.0392
		Tomorrow	0.28222	
	Delivery times	Monday untill Saturday (8.00-22.00)	-0.10667	0.4683
		7 days a week (8.00-22.00)	0.10667	
	Delivery costs	**Free**	0.78658	0.0000
		€ 2,50	0.37162	0.0012
		€ 5,00	-0.39493	0.0036
		€ 7,50	-0.76327	
	Delivery timeslots	Whole day	-0.06887	0.5786
		Half day (before or after 15.00)	0.06005	0.6146
		Timeslot of 4 hours	-0.12845	0.3063
		Timeslot of 2 hours	0.13727	
	Pick-up point Constant		-2.48287	0.0000
Pick-up points	Fastest Pick-up	Same day	-0.23198	0.2463
		Tomorrow	0.23198	
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.18292	0.2559
		7 days a week (8.00-22.00) with adjacent supermarket	0.21683	0.1746
		24 hours a day on weekdays and in the weekends (8.00-22.00), automated and without adjacent supermarket	-0.12893	0.4693
		24/7 opened, automated and without adjacent supermarket	-0.27082	
	Costs for pick-up	**Free**	0.74001	0.0000
		€ 2,50	0.03510	0.8388
		€ 5,00	-0.00253	0.9885

		€ 7,50	-0.77258	
	Traveltime	**0-10 minutes from home**	0.57064	0.0002
		11-20 minutes from home	0.34001	0.0309
		21-30 minutes from home	-0.39240	0.0390
		31-40 minutes from home	-0.51825	

4.2.4 Rural: Dinner party

Table 4.19 gives an overview of the data output for the scenario of hosting a dinner party of respondents living in a rural area. The utility weights (β) of the constants are negative. Since these values are negative, the respondents have a preference for going to the store him/herself instead of ordering online. The home delivery constant has a utility weight of -1.87392 (p=0.0000) and the pick-up point constant has a utility weight of -2.81710 (p=0.0000). Since the utility weight of home delivery is higher, this option is preferred over the option pick-up point.

With regard to home delivery, the attributes with significant attribute levels are Delivery costs and Delivery timeslots. The attribute Delivery costs shows a positive utility weight for free delivery and a delivery cost of €2.50, respectively 0.67541 (p=0.0000) and 0.20595 (p=0.0878). A delivery cost of €5.00 and €7.50 show a negative utility weight of respectively -0.32779 (p=0.0176) and -0.55357. The attribute delivery timeslots shows two attribute levels with a negative utility weight, but only the attribute level of a timeslot of half day is significant with a utility weight of -0.48186 (p=0.0007). The timeslots of 4 hours and 2 hours show a positive utility weight of respectively 0.20801 (p=0.0859) and 0.40526. In general, low delivery costs and small timeslots are preferred.

In the case of pick-up the attributes with significant attribute levels are Costs for pick-up and Travel time. For Cost for pick-up the only significant attribute levels are Free delivery and a delivery cost of €2.50. Both have a positive utility weight of respectively 0.95791 (p=0.000) and 0.42191 (p=0.0195). Travel time shows a positive utility weight for a travel time of 0-10 minutes from home and 11-20 minutes from home, respectively 0.56519 (p=0.0007) and 0.53095 (p=0.0013). In general respondents favor no or a low pick-up cost and a lower travel time, of 0-10 minutes from home or otherwise 11-20 minutes from home.

Table 4.19: MNL model: rural area – dinner party

	Attribute	Attribute level	β	P
	Home delivery Constant		-1.87392	0.0000
Homedelivery	Fastest delivery	Same day	-0.14110	0.3208
		Tomorrow	0.14110	
	Delivery times	Monday untill Saturday (8.00-22.00)	0.13065	0.3852
		7 days a week (8.00-22.00)	-0.13065	
	Delivery costs	**Free**	0.67541	0.0000
		€ 2,50	0.20595	0.0878
		€ 5,00	-0.32779	0.0176
		€ 7,50	-0.55357	
	Delivery timeslots	Whole day	-0.13141	0.3201
		Half day (before or after 15.00)	-0.48186	0.0007

		Timeslot of 4 hours	0.20801	0.0859
		Timeslot of 2 hours	0.40526	
	Pick-up point Constant		-2.81710	0.0000
Pick-up points	Fastest Pick-up	Same day	-0.19715	0.4095
		Tomorrow	0.19715	
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.02141	0.9072
		7 days a week (8.00-22.00) with adjacent supermarket	0.18402	0.3069
		24 hours a day on weekdays and in the weekends (8.00-22.00), automated and without adjacent supermarket	0.0646	0.7314
		24/7 opened, automated and without adjacent supermarket	-0.27003	
	Costs for pick-up	**Free**	0.95791	0.0000
		€ 2,50	0.42191	0.0195
		€ 5,00	-0.29713	0.1703
		€ 7,50	-1.08269	
	Traveltime	**0-10 minutes from home**	0.56519	0.0007
		11-20 minutes from home	0.53095	0.0013
		21-30 minutes from home	-0.26278	0.1961
		31-40 minutes from home	-0.83336	

4.2.5 Comparison Weekly groceries Urban vs Rural

For the scenario weekly groceries the MNL model for respondents in an urban and rural area were estimated. Figures 4.16 until 4.23 gives an overview of the utility weights (β) for every attribute in separate graphs with the corresponding levels. The ''urb'' indicates the sample of respondents living in an urban area and the ''rur'' indicates the sample of respondents living in a rural area. The attribute levels in the figure with no significant utility weight have a faded color, while the attribute levels with a significant utility weight have a vibrant color.

In both areas for the attribute ''Fastest possible delivery'' the attribute level tomorrow is preferred. The rural sample shows significant utility weights, while the urban does not. Low delivery costs seem to be preferred. The pattern seems to be the same for both living areas, the lower the costs the higher the utility weight. In both living areas the utility weights of the attribute levels are significant. The sample of the urban area shows a significant utility weight for the attribute level opening times of Pick-up Points 7 days a week (8.00-22.00) with adjacent supermarket, while the sample of the rural area has no significant utility weights. The pattern for cost of pick-up for living areas is the same, the lower the costs the higher the utility weight. However only the utility weight for the attribute level free is for both scenarios significant. The attribute travel time only shows significant attribute levels for the sample of respondents living in a rural area. The longer the travel time the least it is preferred. 0-10 and 11-20 minutes from home have a positive utility weight.

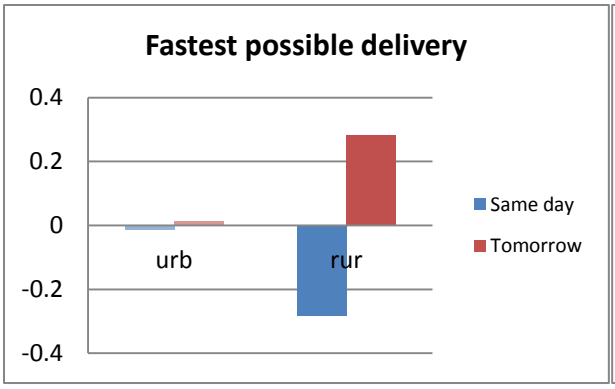


Figure 4.16: Fastest possible delivery - weekly groceries

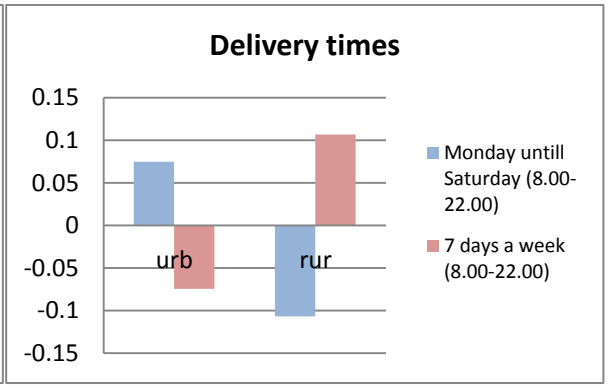


Figure 4.17: Delivery times - weekly groceries

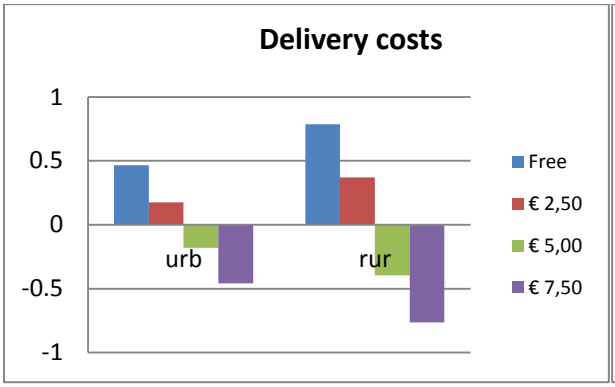


Figure 4.18: Delivery costs - weekly groceries

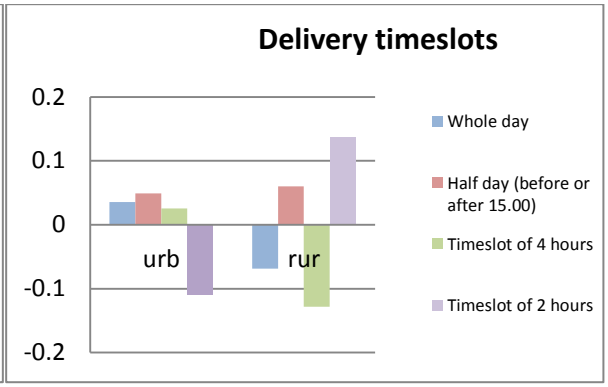


Figure 4.19: Delivery timeslots - weekly groceries

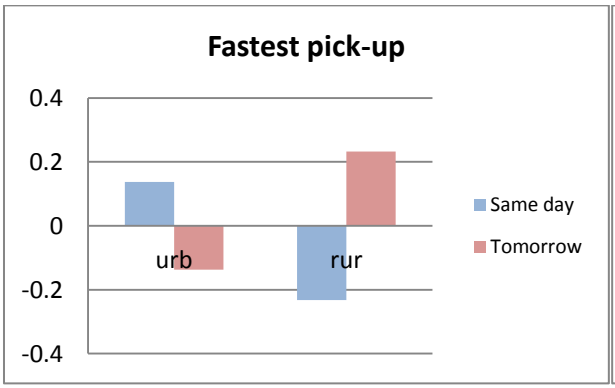


Figure 4.20: Fastest pick-up - weekly groceries

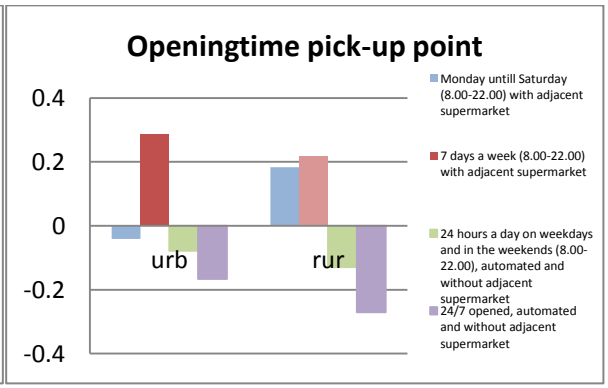


Figure 4.21: Openingtime pick-up point - weekly groceries

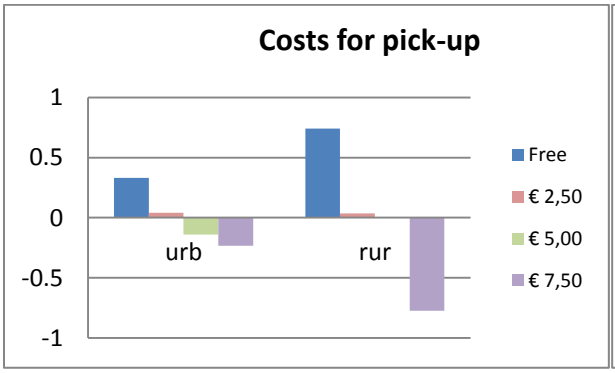


Figure 4.22: Costs for pick-up - weekly groceries

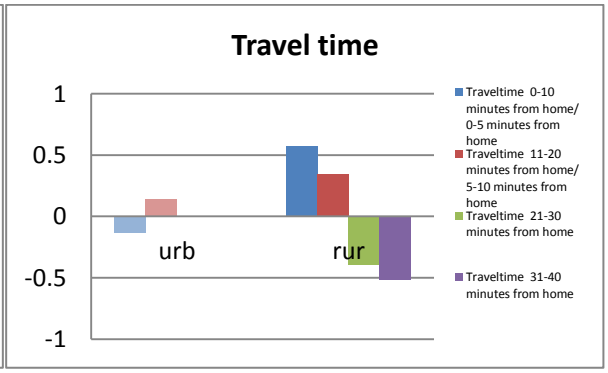


Figure 4.23: Travel time - weekly groceries

The figure 4.24 shows the relative importance of the utility weight. The relative importance is calculated by dividing the range of the attribute by the sum of the ranges of all attributes. The attributes are shown from most important to least important. The vibrant colors with black border show the attributes with significant utility weights of the attribute levels.

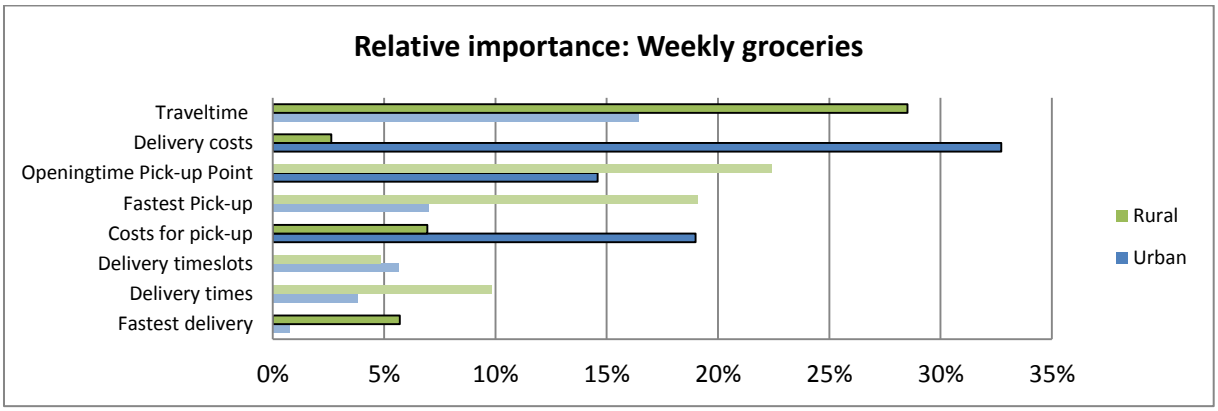


Figure 4.24: Comparison relative importance of attributes – weekly groceries

Travel time is for respondents living in a rural area the most important and significant attribute, while delivery costs is for respondents living in an urban area the most important significant attribute. The delivery costs are the relatively least important significant attribute for respondents living in a rural area. Also pick-up costs are more important for respondents in an urban area compared to respondents in a rural area.

4.2.6 Comparison Dinner party Urban vs Rural

For the scenario hosting a dinner party the MNL model for respondents in an urban and rural area were estimated. Figures 4.25 until 4.32 gives an overview of the utility weights (β) for every attribute in separate graphs with the corresponding levels. The ''urb'' indicates the sample of respondents living in an urban area and the ''rur'' indicates the sample of respondents living in a rural area. The attribute levels in the figure with no significant utility weight have a faded color, while the attribute levels with a significant utility weight have a vibrant color.

In both areas for the attribute ''Fastest possible delivery'' the attribute level tomorrow is preferred. The urban sample shows significant utility weights for the attribute levels, while the urban does not. Low delivery costs seem to be preferred. The pattern seems to be the same for both living areas, the lower the costs the higher the utility weight. In both living areas the utility weights of the attribute levels are significant. The attribute delivery timeslots shows a pattern: small timeslots are preferred over the bigger ones. The sample of a rural area shows a negative utility weight for the attribute level timeslots of half a day, and a positive utility weight for a timeslot of 4 hours. The sample of the urban area shows a significant utility weight for the attribute level opening times of Pick-up Points 7 days a week (8.00-22.00) with adjacent supermarket, while the sample of the rural area has no significant utility weights. The pattern for cost of pick-up for living areas is the same, the lower the costs the higher the utility weight. In both living areas the utility weights of the attribute levels are significant. The attribute travel time only shows significant attribute levels for the sample of respondents living in a rural area. The longer the travel time the least it is preferred. 0-10 and 11-20 minutes from home have a positive utility weight.

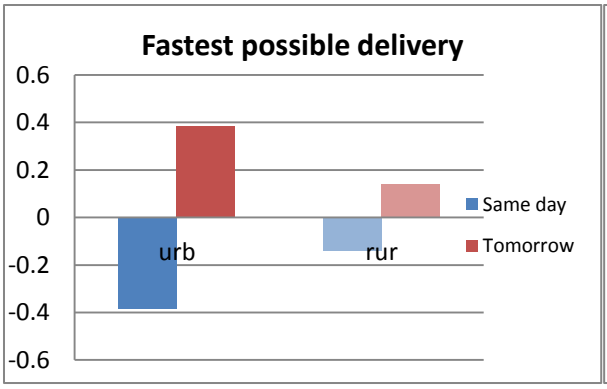


Figure 4.25: Fastest possible delivery - dinner party

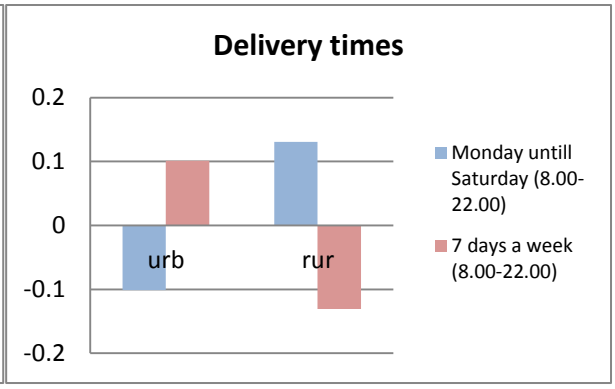


Figure 4.26: Delivery times – dinner party

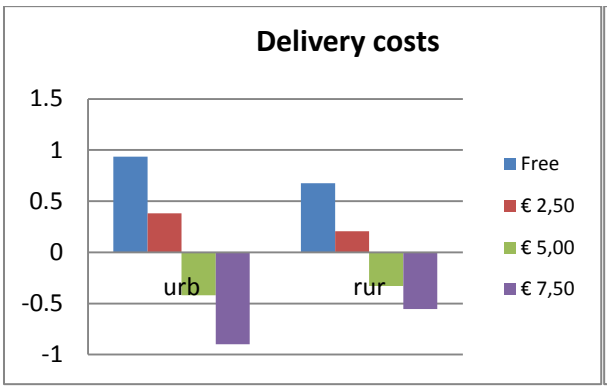


Figure 4.27: Delivery costs – dinner party

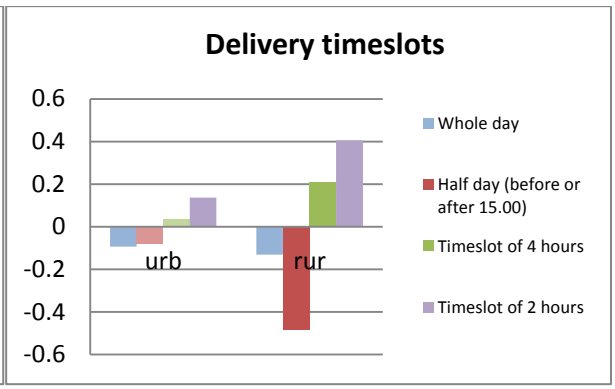


Figure 4.28: Delivery timeslots –dinner party

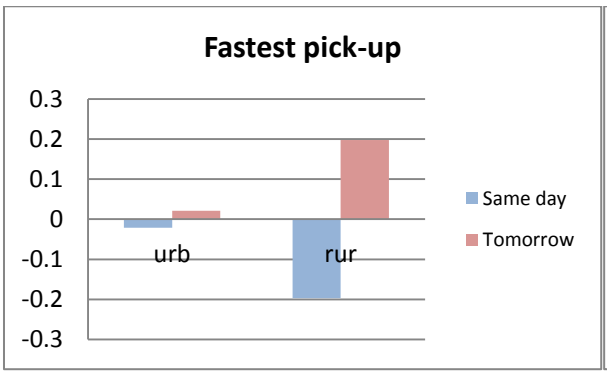


Figure 4.29: Fastest pick-up – dinner party

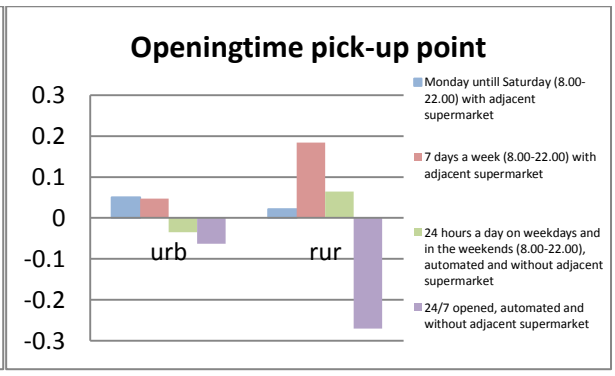


Figure 4.30: Openingtime pick-up point – dinner party

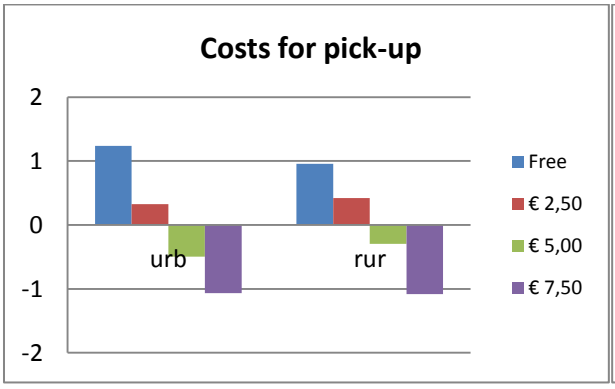


Figure 4.31: Costs for pick-up – dinner party

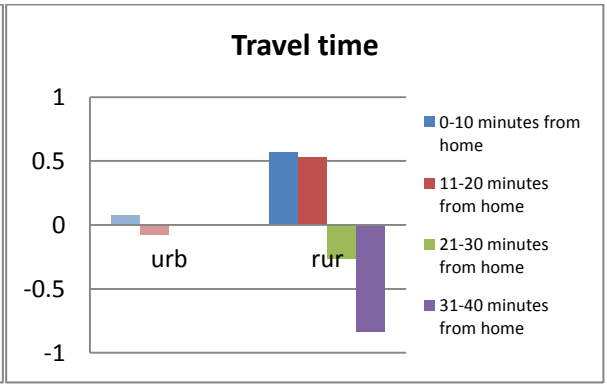


Figure 4.32: Travel time – dinner party

The figure 4.33 shows the relative importance of the utility weight. The relative importance is calculated by dividing the range of the attribute by the sum of the ranges of all attributes. The attributes are shown from most important to least important. The vibrant colors with black border show the attributes with significant utility weights of the attribute levels.

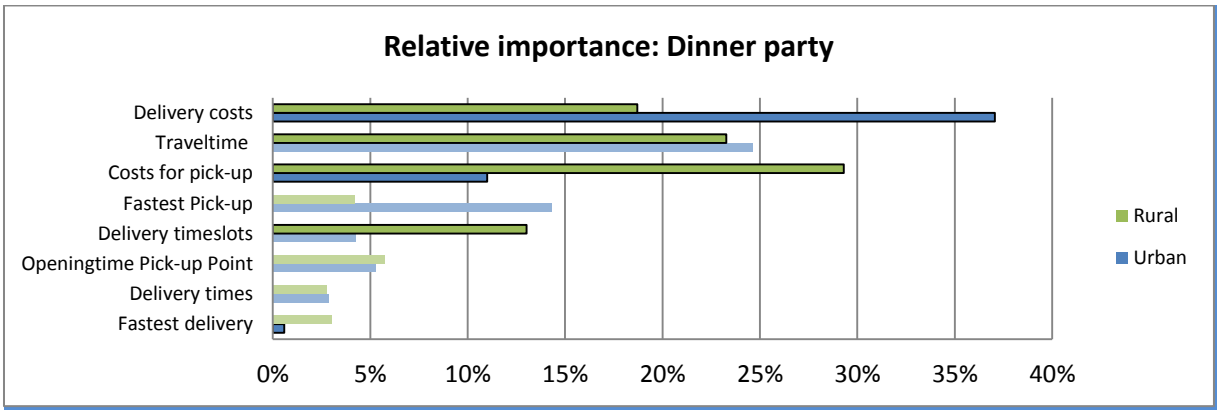


Figure 4.33: Comparison relative importance of attributes – dinner party

For respondents living in an urban area delivery costs are the most important and significant attribute, while costs for pick-up is for respondents living in an urban area the most important significant attribute. However, costs for pick-up and delivery costs are for both areas an important and significant attribute. Travel time and delivery timeslots are also an important and significant attribute for respondents living in a rural area.

4.3 Latent class model

The latent class models are also estimated with Nlogit5. The same as the MNL models, respondents living in an urban area and respondents living in a rural area are split. For each level or each attribute the utility weight (β) and significance (p) has been estimated. The higher the Utility weight/Beta (β) the higher the preference of the respondent in the corresponding segment for this level. The shown utility weight is an average of respondents in a segment instead of an average of the whole sample. Considering the respondents in urban areas doing weekly groceries, 3 segments could be found, while for the scenario of hosting a dinner party the latent class model found no segments. For respondents in rural areas the scenario weekly groceries, the model was able to find 2 segments of people with different preferences. For the scenario of hosting a dinner party for respondents in a rural area the latent class model was not able to find any segments.

Table 4.20 shows the model performance of the latent class model. Compared to the MNL model the Latent Class model found higher Rho^2, which indicates a better model fit. With a value of 0.508 and 0.568 the model has a high goodness-of-fit.

Table 4.20: Model performance – LC model

Group	Log likelihood estimated model= LL(β)	Log likelihood null model = LL(0)	Rho^2
Urban weekly groceries	-1379.23357	-2803.6586	0.508059
Rural weekly groceries	-827.54836	-1915.9798	0.568081

4.3.1 Urban: weekly groceries

The latent class model considering respondents living in an urban area doing weekly groceries could also be sorted into 3 segments. The probability that a respondent belongs to segment 1 is 60.59%, to segment 2 is 29.00%, and to segment 3 is 10.41%. Both segment 1 and 2 show a negative utility weights as constants, in both segments going to the store is preferred over home delivery and Pick-up point. In contradiction to segment 3, which shows positive utility weights. Respondents in segment 3 prefer to order weekly groceries online over going to the supermarket themselves. However, Home delivery is more preferred than pick-up.

When comparing only segment 1 and 2, segment 1 has bigger negative utility weights, i.e. the likelihood a respondent in segment 1 will choose going to the store over home delivery and pick-up is a lot bigger than if this respondent will be in segment 2 just, similar to the latent class model with 2 segments discussed before.

The respondents in segment 1 have no significant preference for attributes, possibility they do not prefer online grocery shopping whatever the attribute levels might be.

In segment 2 the attributes Delivery costs, Opening times pick-up point and Costs for pick-up show significant attribute levels. The attribute level delivery costs: Free and a delivery cost of €2.50 have a positive utility weight of respectively 0.82066 (p=0.0000) and 0.30678 (p=0.0681). For a delivery cost of €5.00 and €7.50 it shows a negative utility weight of, respectively -0.30367 (p=0.0948) and -0.82377. An opening time of the pick-up point of 7 days a week (8.00-22.00) with an adjacent supermarket has a positive utility weight of 0.59465 (p=0.0003). Cost for pick-up has only one significant attribute level: free pick-up, with a positive utility weight of 0.41034 (p=0.0176).

Segment 3 shows only one attribute with a significant attribute level: Fastest pick-up. Same day pick-up has a positive utility weight of 0.81864 (p=0.0069).

All together respondents in segment 1 have no significant attribute level preferences. Respondents in segment 2 prefer in the case of home delivery, free delivery and a delivery fee of €2.50 and delivery the next day. However, they prefer free delivery more than delivery costs of €2.50. And in the case of pick-up a pick-up point which is open 7 days a week (8.00-22.00) with an adjacent supermarket, with no pick-up fee (free pick-up). Segment 3 prefers in case of pick-up the possibility of same day pick-up.

Table 4.21: LC model: urban area – weekly groceries

			segment 1		segment 2		segment 3	
	Attribute	Attribute level	Beta	P	Beta	P	Beta	P
	Home delivery Constant		-4.06944	0.0000	-1.00509	0.0000	2.19743	0.0000
Homedelivery	Fastest delivery	Same day	-0.48584	0.3435	0.07949	0.6910	0.19840	0.5020
		Tomorrow	(0.48584)		(-0.07949)		(-0.1984)	
	Delivery times	Monday untill Saturday (8,00-22,00)	-0.24942	0.6874	0.17351	0.3713	0.16405	0.5689
		7 days a week (8,00-22,00)	(0.24942)		(-0.17351)		(-0.16405)	
	Delivery costs	**Free**	0.72877	0.1080	0.82066	0.0000	0.18488	0.4837
		€ 2,50	0.46419	0.2721	0.30678	0.0681	-0.07515	0.7643
		€ 5,00	-0.75737	0.2570	-0.30367	0.0948	-0.00149	0.9956
		€ 7,50	(-0.43559)		(-0.82377)		(-0.10824)	
	Delivery timeslots	Whole day	-0.29539	0.5449	0.18316	0.2726	0.06113	0.8218

		Half day (before or after 15,00)	-0.33151	0.6030	0.03906	0.8133	0.16468	0.5573
		Timeslot of 4 hours	0.44762	0.3200	-0.19644	0.2717	0.14645	0.5565
		Timeslot of 2 hours	(0.17928)		(-0.02578)		(-0.37226)	
	Pick-up point constant		-4.58924	0.0017	-0.86156	0.0000	1.13280	0.0244
Pick-up points	Fastest pick-up	**Same day**	0.51622	0.6711	-0.12582	0.5553	0.81864	0.0069
		Tomorrow	(-0.51622)		(0.12582)		(-0.81864)	
	Opening times Pick-up Point	Monday untill Saturday (8,00-22,00) with adjacent supermarket	0.12745	0.8109	-0.22275	0.2243	0.21767	0.3894
		7 days a week (8,00-22,00) with adjacent supermarket	-0.06513	0.9524	0.59465	0.0003	-0.11952	0.6545
		24 hours a day on weekdays and in the weekends (8,00-22,00), automated and without adjacent supermarket	0.33085	0.6776	-0.0993	0.5974	-0.02060	0.9390
		24/7 opened, automated and without adjacent supermarket	(-0.39317)		(-0.2726)		(-0.07755)	
	Costs for pick-up	**Free**	1.52746	0.2436	0.41034	0.0176	-0.00367	0.9893
		€ 2,50	-2.21524	0.5084	0.12806	0.4425	0.16822	0.5092
		€ 5,00	0.37715	0.8148	-0.22318	0.2286	-0.02464	0.9278
		€ 7,50	(0.31063)		(-0.31522)		(-0.13991)	
	Travel time	Less than 5 minutes from home	-1.63264	0.2279	-0.09683	0.6222	-0.01366	0.9643
		5-10 minutes from home	(1.63264)		(0.09683)		(0.01366)	
	Probability to be in class		0.60586	0.0000	0.29004	0 .0000	0.10411	0.0000

4.3.2 Rural: Weekly groceries

The latent class model considering respondents living in a rural area doing weekly groceries was able to compute a model with 2 segments. For the scenario hosting a dinner party no segments could be found.

The probability that a respondent belongs to segment 1 is 72.91%, and to segment 1 is 27.09%. Both segments have a significant value of the constant. Segment 1 shows a negative utility weights as constants, while segment 2 shows a negative and positive utility weight as constant. Segment 2 shows a positive utility weight for home delivery. Respondents in segment 2 prefer home delivery over going to the store themselves. Hence in segment 1 going to the store is preferred over home delivery and Pick-up point, and in segment 2 home delivery is preferred over going to the store, while going to the store is preferred over pick-up.

The respondents in segment 1 have a significant preference for the attributes: Delivery costs, Opening times pick-up point, costs for pick-up and travel time. The attribute level delivery costs: Free has a positive utility weight of 1.39617 (p=0.0001) and a negative utility weight for a delivery cost of €5.00, -1.06959 (p=0.0737). An opening time of the pick-up point of 7 days a week (8.00-22.00) with an adjacent supermarket has a positive utility weight of 0.67478 (p=0.0424). The attribute cost for pick-up only has one significant attribute level: free pick-up. Free pick-up has a positive utility weight of 1.12485 (p=0.0005). For travel time there is also only one significant attribute level: 0-10 minutes travel time, with a utility weight of 1.30506 (p=0.0003).

Segment 2 shows significant preferences for the attributes levels, Delivery costs, fastest delivery, costs for pick-up and travel time. Next day delivery is preferred over same day delivery with a positive utility weight of 0.57472. The attribute level delivery costs: Free and a delivery cost of €2.50 have a positive utility weight of respectively 1.08716 (p=0.0000) and 0.39220 (p=0.0232). For a

delivery cost of €5.00 and €7.50 it shows a negative utility weight of, respectively -0.34416 (p=0.0643) and -1.1352. The attribute cost for pick-up only has one significant attribute level: free pick-up. Free pick-up has a positive utility weight of 0.72037 (p=0.0005). Travel time shows positive utility weights for the attribute levels: 0-10 minutes from home and 11-20 minutes from home, respectively 0.41211 (p=0.0586) and 0.58636 (p=0.0070). Both 21-30 minutes from home and 31-40 minutes from home show a negative utility weight of respectively -0.5166 (p=0.0336) and -0.48187.

All together respondents in segment 1 prefer in the case of home delivery, free delivery. And in the case of pick-up a pick-up point which is open 7 days a week (8.00-22.00) with an adjacent supermarket, with no pick-up fee (free pick-up) within a distance of 0-10 minutes travel time from home.

Respondents in segment 2 prefer in the case of home delivery, free delivery and a delivery fee of €2.50 and delivery the next day. However, they prefer free delivery more than delivery costs of €2.50. And in the case of pick-up, free pick-up is preferred with a travel time of 0-10 minutes or 11-20 minutes.

Table 4.22: LC model: urban area – dinner party

			segment 1		segment 2	
	Attribute	Attribute Level	Beta	P	Beta	P
	Home delivery Constant		-4.39577	0.0000	0.77472	0.0001
Home delivery	Fastest delivery	**Same day**	0.10717	0.7771	-0.57472	0.0063
		Tomorrow	(-0.10717)		(0.57472)	
	Delivery times	Monday untill Saturday (8.00-22.00)	0.70701	0.2424	-0.2004	0.3440
		7 days a week (8.00-22.00)	(-0.70701)		(0.2004)	
	Delivery costs	**Free**	1.39617	0.0001	1.08716	0.0000
		€ 2.50	0.57606	0.1453	0.3922	0.0232
		€ 5.00	-1.06959	0.0737	-0.34416	0.0643
		€ 7.50	(-0.90264)		(-1.1352)	
	Delivery timeslots	Whole day	0.16636	0.6928	-0.13552	0.4730
		Half day (before or after 15.00)	-0.09281	0.8079	0.04574	0.7981
		Timeslot of 4 hours	-0.55997	0.2113	-0.19982	0.2831
		Timeslot of 2 hours	(0.48642)		(0.2896)	
	Pick-up point constant		-4.13009	0.0000	-0.43256	0.0387
Pick-up points	Fastest pick-up	Same day	-0.45584	0.3185	-0.36196	0.1770
		Tomorrow	(0.45584)		(0.36196)	
	Opening times Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.05552	0.8760	0.11340	0.6052
		7 days a week (8.00-22.00) with adjacent supermarket	0.67478	0.0424	0.07125	0.7453
		24 hours a day on weekdays and in the weekends (8.00-22.00). automated and without adjacent supermarket	-0.12248	0.7590	-0.05592	0.8129
		24/7 opened. automated and without adjacent supermarket	(-0.60782)		(-0.12873)	
	Costs for pick-up	**Free**	1.12485	0.0005	0.72037	0.0005
		€ 2.50	-0.32457	0.4558	0.24499	0.2678
		€ 5.00	-0.15335	0.6970	0.01185	0.9582
		€ 7.50	(-0.64693)		(-0.97721)	

	Travel time	**0-10 minutes from home**	1.30506	0.0003	0.41211	0.0586
		11-20 minutes from home	0.56147	0.1637	0.58636	0.0070
		21-30 minutes from home	-0.42055	0.4123	-0.5166	0.0336
		31-40 minutes from home	(-1.44598)		(-0.48187)	
	Probability to be in class		**0.72907**	**0.0000**	**0.27093**	**0.0000**

4.3.3 Segments vs psychographics

To examine if there are relationships between segments and psychographics, a t-test independent sample test is conducted for the two segment latent class model of the rural area considering the scenario of doing weekly groceries. For the three segment latent class model of the urban area considering the scenario of doing weekly groceries an one-way ANOVA and post hoc tests are conducted.

Appendix 9 shows the complete output of the one-way ANOVA and the post-hoc tests. Table 4.23 shows the p-values of the conducted ANOVA. The psychographic category innovation, time pressure and shopping enjoyment show a significant variance in the two different segments of the scenario weekly groceries in an urban area.

Table 4.23: One-way ANOVA : urban area – weekly groceries

Category	Sig.
Innovation	**0.009**
Loyalty	0.492
Motivation to conform	0.703
Price consciousness*	0.675
Time pressure	**0.070**
Shopping enjoyment	**0.037**

* low item-total correlation (0.287)

The post hoc test makes it possible to not only find if there is a significant difference, but also between which segments this differences is, and what the difference is. In the category innovation it is found that segment 1 scores lower, which means respondents in this segments are significantly less innovative than respondents in segment 2 and 3. In the category time pressure it is found that segment 1 scores lower, which means respondents in this segments feel significantly less time pressed than respondents in segment 3. Respondents in segment 1 and 2 have a significant higher shopping enjoyment, which means they enjoy shopping more than respondents in segment 3.

For the two segment weekly groceries latent class model in a rural area a T-test is conducted. The T-test shows if there is equality of variances and/or equality of means for a certain category, between the two segments. Appendix 10, shows a more extensive version of the results. Table 4.24 shows that for two psychographics there are significant differences found between the respondents in both living areas: motivation to conform and time pressure.

The outcomes of the Levene's test show if there is an equality of variances of the corresponding category for different living areas. There is a significant difference of variances if the value in the

column ''sig.'' is lower than 0.5. For none of the categories this is the case. To make sure the mean difference is significant, the t-test for equality of means is conducted. For the categories motivation to conform and time pressure this is the case. Which means there is a significant difference between the means of the segments.

Table 4.24: T-test independent samples test: rural area – weekly groceries

Category		Levene's test for equality of variances		t-test for equality of means	
		F	Sig.	df	Sig. (2-tailed)
Innovation	Equal variances assumed	.026	.873	216	.357
	Equal variances not assumed			98.336	.359
Loyalty	Equal variances assumed	1.472	.226	216	.909
	Equal variances not assumed			113.359	.902
Motivation to conform	Equal variances assumed	.597	.441	216	.095
	Equal variances not assumed			110.441	.078
Price consciousness*	Equal variances assumed	.133	.716	216	.793
	Equal variances not assumed			99.800	.791
Time pressure	Equal variances assumed	2.279	.133	216	.048
	Equal variances not assumed			123.944	.028
Shopping enjoyment	Equal variances assumed	1.384	.241	216	.534
	Equal variances not assumed			113.221	.505

* low item-total correlation (0.287)

4.3.4 Segments vs demographics

To examine if there are relationships between segments and demographics, chi-square tests are conducted. Appendix 11 shows an overview of the output. Only the significant demographics are shown.

Rural weekly groceries 2 segments

There are significant differences found in the two segments of rural areas. As can be seen in figure 4.34, segment 2 holds a larger group of young people (younger than 25) and mid aged people (25 till 50 years), while segment 1 has a bigger group aged 50 years and up. With a chi-square of 6.438 and corresponding p-value of 0.040, there is a significant difference found between segment 1 and 2.

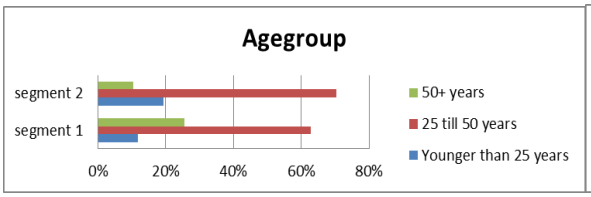


Figure 4.34: Age groups: segments - rural area

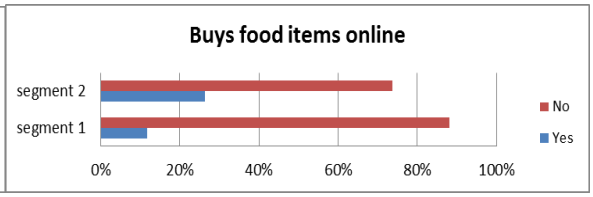


Figure 4.35: Buys food items online: : segments - rural area

Figure 4.35, shows if respondents in a certain segment buy food items online. With a chi-square of 6.737 and a corresponding p-value of 0.009, there is a significant difference between the two segments. Respondents belonging to segment 2, are more likely to have ever bought food items online. This same pattern is visible again in Figure 4.36, where respondents belonging to segment 2 are more likely to have ever bought weekly groceries online. With a chi-square of 3.579 and a corresponding p-value of 0.059, there is a significant difference between the two segments

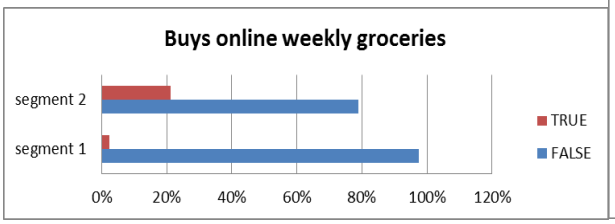


Figure 4.36: Buys weekly groceries online: segments - rural area

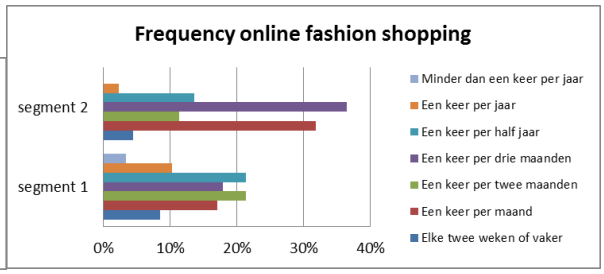


Figure 4.37: Frequency online fashion shopping : : segments - rural area

The frequency of online fashion shopping (figure 4.37) also shows a significant difference between the two segments, with a chi-square of 15.426 and a p-value of 0.017. In segment 1 there are more respondents who shop once a half year or less, while in segment 2 respondents tend to shop fashion items more frequent.

Urban weekly groceries 3 segments

There are significant differences found in the three segments of urban areas. There is a significant difference in gender (figure 4.38), with a chi-square of 6.582 and a p-value of 0.029. Segment 3 has the most female respondents, segment 2 less, and segment 1 has the least female respondents.

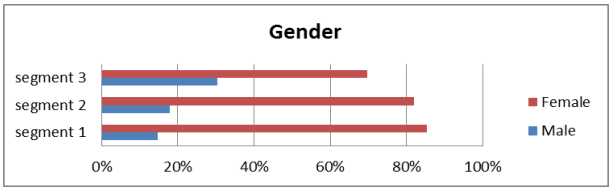


Figure 4.38: Gender : segments – urban area

Figure 4.39 show the frequency of respondents shopping online. With a chi-square of 43.324 and a corresponding p-value of 0.000, there is a significant difference found between the segments. Segment 3 seems to consist of the most frequent online shoppers, segment two with less, segment 1 with the least.

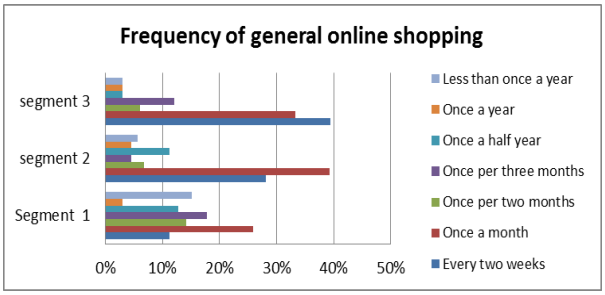


Figure 4.39: Frequency general online shopping : segments – urban area

Figure 4.40 shows the percentage of respondents in a group that buys fashion items online. There is a significant difference with a chi-square of 7.266 and a p-value of 0.026. It can be seen that Segment 3 seems to consist of the most frequent fashion online shoppers, segment 2 with less, segment 1 with the least.

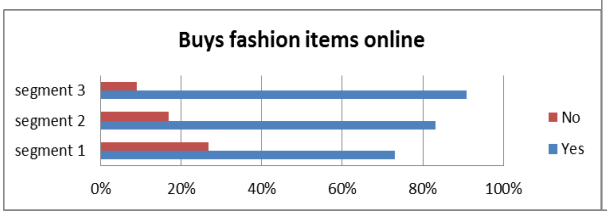


Figure 4.40: Buys fashion items online: segments – urban area

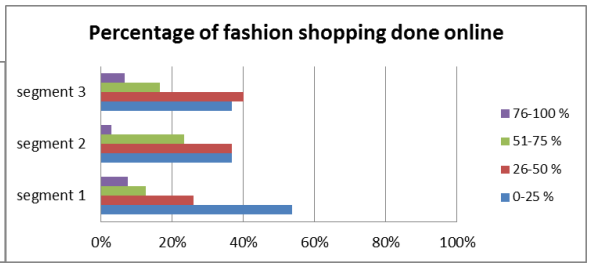


Figure 4.4: % of fashion shopping online: segments – urban area

With a chi-square of 10.843 and a corresponding p-value of 0.093, there is a significant difference between the segments if it comes do the percentage of fashion shopping done online, see figure 4.41. Segment 3 has the biggest group of respondents who show more than 50% online, segment 2 has a smaller group, and segment 1 has the smallest group.

Figure 4.42 shows there is a significance difference between the segment if it comes to buying electronics online, with a chi-square of 4.803 and a corresponding p-value of 0.091. Segment 2 has the highest percentage of electronic shoppers in their segment, segment 1 has less, and segment 3 has the least.

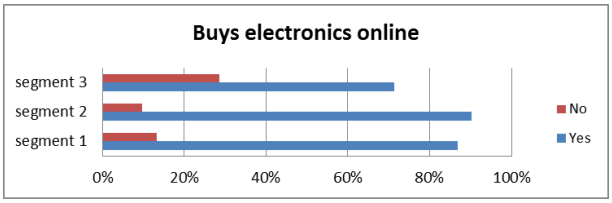


Figure 4.42: Buys electronics online: segments – urban area

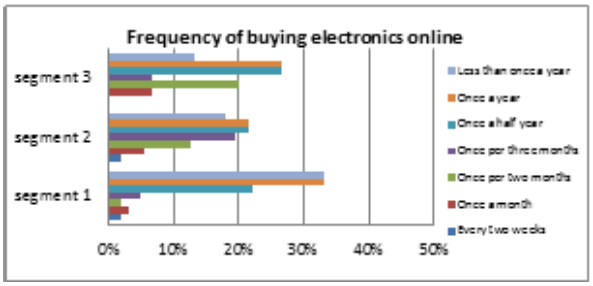


Figure 4.43: Frequency online electronics shopping: segments - urban area

There is also a significant difference for the frequency a respondent buys electronics online (figure 4.43), with a chi-square of 24.592 and a p-value of 0.017. Segment 3 seems to consist of the most regular online shoppers of electronics, segment 2 with less, segment 1 with the least.

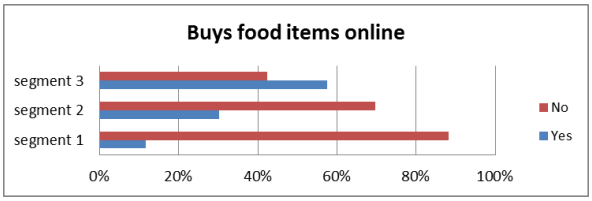


Figure 4.44: Buys food items online: segments - urban area

Figure 4.44 shows the percentage of a segment that buys food online. With a chi-square of 40.651 and a corresponding p-value of 0.000, there is a significant difference between the segments. Segment 3 has the biggest percentage of online food item shoppers, followed by segment 2. Segment 1 has the lowest percentage online food item shoppers.

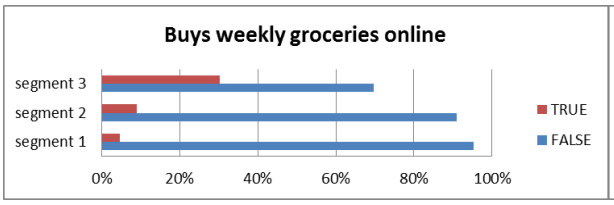


Figure 4.45: Buys weekly groceries online: segments - urban area

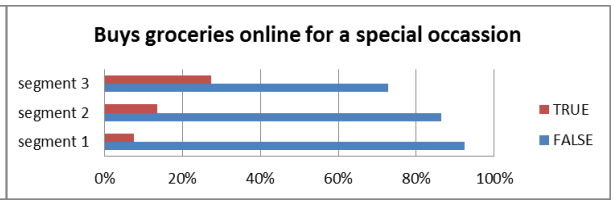


Figure 4.46: Buys weekly groceries online: segments –urban area

With a chi-square of 24.205 and p-value of 0.000 there is a significant difference between the segments for online weekly grocery shopping (figure 4.45) and with a chi-square of 11.506 and a p-value of 0.003 (figure 4.46), there is a difference between the segments for online grocery shopping for special occasions. The same pattern as for buying food items online can be seen for the buying of weekly groceries and online groceries for special occasions. Segment 3 has the biggest percentage of weekly groceries online shoppers and online grocery shoppers for a special occasion, followed by segment 2. Segment 1 has the lowest percentage weekly groceries online shoppers and online grocery shoppers for a special occasion.

4.3.5 Overview of the findings per segment

As discussed before the two classes found with a LC model for the rural weekly groceries scenario, show significant differences for age group, frequency of buying food items online, regularity of buying fashion items online and familiarity with online weekly grocery shopping. The classes found for the urban weekly groceries scenario, show significant differences for gender, frequency of buying online, frequency of buying electronics online, percentage of fashion items shopped online vs offline, familiarity with buying fashion items online, familiarity with buying electronics online, familiarity with online grocery shopping, familiarity with online weekly grocery shopping and familiarity with online grocery shopping for a special occasion.

Rural weekly groceries 2 segments

The table 4.25 gives an overview of the findings of the LC model with two segments in a rural area concerning the scenario of weekly groceries. The preferences per segment and the characteristics of the respondents belonging to a certain segment. To make it easier to recognize, the two segments are given a name which corresponds with the preferences and characteristics of the respondents in it. Segment 1 of respondents living in a rural area considering the scenario of weekly groceries, seems to be a pretty traditional group, they are not particularly adaptive and most respondents are mid- aged. Hence the name “Rural traditional shoppers” is given. Segment 2 seems to be more adaptive towards online shopping, and online groceries shopping. Most respondents are young. Hence the name “Rural modern shoppers” is given.

Table 5.25: Overview findings LC model: rural area- weekly groceries

Segment 1: Rural traditional shoppers	**Segment 2: Rural modern shoppers**
Preferences: - Free home delivery, less likely to choose home delivery when there are pick-up costs over €5.00 - 7 days a week (8.00-22.00) with adjacent supermarket preferred - Free pick-up - PP within 10 minutes travel time - Prefer self to store over HD and PP - PP preferred slightly over HD (constants -4.13 vs -4.40) Characteristics - More older respondents (50+), less (25-50 and 25-) - Less frequent food items online buyers - Less respondents bought food items online in the last 2 years - Buy less regularly fashion online - Less online weekly groceries buyers	Preferences: - Next day delivery - delivery costs more than €5.00 have negative influence on choosing HD - delivery costs of €2.50 and free have a positive influence on choosing HD - Free pick-up - Up to 20 minutes travel time is preferred - 21 minutes and more has a negative influence on choosing PP - HD is preferred over self to store (constant 0.77) - self to store is preferred over PP (constant -0.43) Characteristics - More young respondents (25- and 25-50), less (50+) - More frequent food items online buyers - Bought food items online in the last 2 years - Buy more regularly fashion online

- Respondents in segment 2 find themselves more pressed for time.
- Respondents in segment 2 score lower for the psychographic category motivation to conform

Urban Weekly groceries 3 segments

The tables 4.26 give an overview of the findings of the LC model with three segments in an urban area concerning the scenario of weekly groceries. The preferences per segment and the characteristics of the respondents belonging to a certain segment. To make it easier to recognize, the three segments are given a name which corresponds with the preferences and characteristics of the respondents in it. Segment 1 of respondents living in a rural area considering the scenario of weekly groceries, seems to be a pretty traditional group, they are not particularly adaptive and most respondents are females. Hence the name “Urban traditional shoppers” is given. Segment 2 seems to be more adaptive towards online shopping, and online groceries shopping. This group seems to be flexible, not the most adaptive not the most conservative. Hence the name “Urban flex shoppers” is given. Segment 3 shows an only segment a positive constants for pick-up point and home delivery, which indicates this groups prefers these options over going to the store themselves. This group seems to embrace changes, since it prefers online grocery shopping over traditional grocery shopping. Hence the name “Urban innovative shoppers”.

Table 5.26: Overview findings LC model: urban area - weekly groceries

Segment 1: Urban traditional shoppers

Preferences:
- Prefer self to store over HD and PP
- HD preferred slightly over PP (constants -4.07 vs -4.59)

Characteristics
- Most females, least males
- Least frequent general online shoppers
- Least frequent electronics online shoppers
- Least online fashion items shoppers
- Does most fashion shopping offline
- Least online weekly groceries shoppers
- Least online groceries shoppers for a special occasion
- Least food items online shoppers
- Middle electronics online shoppers

Segment 2: Urban flex shoppers

Preferences:
- Delivery costs of €2.50 and free have a positive influence on choosing HD
- Delivery costs more than €5.00 have negative influence on choosing HD
- 7 days a week (8.00-22.00) with adjacent supermarket preferred
- Free pick-up
- PP preferred over HD (constants -0.86 vs -1.01)

Characteristics
- Middle females, middle males
- Middle frequent general online shoppers, close to most
- Middle frequent electronics online shoppers
- Middle online fashion items shoppers
- Shop online and offline for fashion items
- Middle online weekly groceries shoppers
- Middle online groceries shoppers for a special occasion
- Middle food items online shoppers
- Most electronics online shoppers

Segment 3: Urban innovative shoppers

Preferences:
-Same day pick-up
-Prefer HD and PP over self to store
-HD is preferred over PP(constants 2.20 vs 1.13)

Characteristics
-Most males, least females
-Most frequent general online shoppers
-Most frequent electronics online shoppers
-Most online fashion items shoppers
- Shop often online fashion items
- Most online weekly groceries shoppers
- Least online groceries shoppers for a special occasion
- Most food items online shoppers
- Least electronics online shoppers

- Respondents in segment 3 find themselves significantly more pressed for time compared to respondents in segment 1

- Respondents in segment 1 and 2 have a significantly higher shopping enjoyment, so they enjoy shopping more than segment 3

- Respondents in segment 2 and 3 score significantly higher on innovativeness, compared to segment 1

4.4 Mixed logit model

For all four datasets a mixed logit model was estimated with Nlogit5. The ML model takes continuous heterogeneity into account. The standard deviation parameters for the significant attributes are taken into account. The beta-value, standard deviation and the corresponding p-values are estimated for all four cases (two living areas, with each two scenarios) and shown in table 4.28 until 4.31. The amount of heterogeneity for a certain attribute level is indicated by the standard deviation.

Table 4.27: Model performance – ML model

Group	Log likelihood all parameters= LL(β)	McFadden R^2
Urban weekly groceries	-1470.73800	0.47542
Urban dinner party	-1119.43167	0.60072
Rural weekly groceries	-838.39155	0.56242
Rural dinner party	-629.02030	0.67196

The mixed logit model has a higher R-squared of Mc-Fadden as the multinomial logit models. Which indicates a higher goodness-of-fit. The R-squared of Mc-Fadden is in all cases pretty high, between 0.47542 and 0.67196, see table 4.27. This means the model does a good job at explaining variation. Especially the models with concern to the dinner party scenario.

4.4.1 Urban: Weekly groceries

The attributes delivery times, delivery timeslots, opening times pick-up point and travel time showed no significant standard deviation, when all attribute were included for the standard deviation parameters, see Appendix 12. The last output with only the significant standard deviations determined is shown in table 4.28. Hence the standard deviation parameters for these attributes are not included in the model. For the other attributes the standard deviation according to a normally distributed random component appeared to be significant.

Table 4.28: ML model: urban area – weekly groceries

	Attribute	Attribute level	β	P	St. dev	P
	Constant Home delivery		-3.40905	0.0000	3.16780	0.0000
Home delivery	Fastest delivery	Same day	-0.16047	0.4783	1.11493	0.0017
		Tomorrow	0.16047			
	Delivery costs	Free	0.82789	0.0000	0.69541	0.0111
		€ 2.50	0.27468	0.0906	0.69904	0.0088
		€ 5.00	-0.26763	0.0886	0.37254	0.2839
		€ 7.50	-0.83494			
	Constant pick-up		-4.06018	0.0000	2.82216	0.0000
Pick-up points	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.15703	0.4025	0.38919	0.4035
		7 days a week (8.00-22.00) with adjacent supermarket	0.55731	0.0041	0.70342	0.0015
		24 hours a day on weekdays and in the weekends (8.00-22.00), automated and without adjacent supermarket	-0.25705	0.2190	1.13522	0.0011
		24/7 opened, automated and without adjacent	-0.45729			

		supermarket				
	Costs for pick-up	Free	0.41335	0.0283	0.94279	0.0022
		€ 2.50	0.07956	0.6709	0.07819	0.8452
		€ 5.00	-0.13179	0.5094	0.77482	0.0725
		€ 7.50	-0.36112			
Non random	Delivery times	Monday untill Saturday (8.00-22.00)	0.08705	0.6126		
		7 days a week (8.00-22.00)	-0.08705			
	Delivery timeslots	Whole day	0.09702	0.5062		
		Half day (before or after 15.00)	0.10145	0.4942		
		Timeslot of 4 hours	-0.01208	0.9352		
		Timeslot of 2 hours	-0.18639			
	Fastest Pick-up	Same day	0.14807	0.4327		
		Tomorrow	-0.14807			
	Traveltime	Less than 5 minutes from home	-0.14017	0.4709		
		5-10 minutes from home	0.14017			

By comparing the relative importance of attributes level in the ML model to the MNL model no major differences could be found. The ML model gives more insight into heterogeneity, by estimating the standard deviations.

Fastest delivery and cost for pick-up show both pretty strong heterogeneity with a standard deviation of respectively 1.114 and 0.942 in the first attribute level. This means that there significant variances between respondents. In the attribute delivery costs a considerable individual difference is shown in the first two attribute levels, Free and €2.50. Also the attribute opening time of pick-up point shows a considerable individual difference in the second and third attribute level, 7 days a week (8.00-22.00) with adjacent supermarket & 24 hours a day on weekdays and in the weekends (8.00-22.00), automated and without adjacent supermarket. Hence, if it comes to preferences of respondents opening time of pick-up point and fastest delivery show the biggest variances between respondents, followed by costs for pick-up and delivery cost.

4.4.2 Urban: Dinner party

The attributes fastest delivery, opening times pick-up point and travel time showed no significant standard deviation, when all attributes were included for the standard deviation parameters, see Appendix 13. The last output with only the significant standard deviations determined is shown in table 4.29. Hence for these attributes standard deviation parameters are not included in the model. For the other attributes the standard deviation of a normally distributed random component is estimated.

Table 4.29: ML model: urban area – dinner party

	Attribute	Attribute level	β	P	St. dev	p
	Constant Home delivery		-6.45417	0.0000	7.24025	0.0000
Home delivery	Delivery times	Monday untill Saturday (8.00-22.00)	-0.64916	0.0407	1.57783	0.0001
		7 days a week (8.00-22.00)	0.64916			
	Delivery costs	Free	3.37679	0.0000	2.32347	0.0000
		€ 2.50	1.38783	0.0000	0.73457	0.0567
		€ 5.00	-1.07305	0.0001	1.05137	0.0006
		€ 7.50	-3.69157			
	Delivery timeslots	Whole day	-0.45334	0.1216	1.68190	0.0000

		Half day (before or after 15.00)	-0.31150	0.2456	1.09502	0.0444
		Timeslot of 4 hours	-0.21972	0.3726	0.60530	0.3062
		Timeslot of 2 hours	0.98456			
	Constant pick-up		-6.78868	0.0000	4.88867	0.0000
Pick-up points	Fastest Pick-up	Same day	-0.56140	0.1014	1.12313	0.0065
		Tomorrow	0.56140			
	Costs for pick-up	Free	2.63606	0.0000	2.06399	0.0000
		€ 2.50	1.26478	0.0000	0.50457	0.4353
		€ 5.00	-0.30136	0.3350	0.05991	0.9197
		€ 7.50	-3.59948			
Non random	Fastest delivery	Same day	-1.68270	0.0000		
		Tomorrow	1.68270			
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.03437	0.8899		
		7 days a week (8.00-22.00) with adjacent supermarket	-0.00844	0.9716		
		24 hours a day on weekdays and in the weekends (8.00-22.00), automated and without adjacent supermarket	0.01300	0.9603		
		24/7 opened, automated and without adjacent supermarket	-0.03893			
	Traveltime	Less than 5 minutes from home	0.36397	0.2107		
		5-10 minutes from home	-0.36397			

By comparing the relative importance of attributes level in the ML model to the MNL model no major differences could be found. However the constants found in the ML model are closer to each other which indicates there is a smaller difference in preference between home delivery and pick-up. The ML model gives more insight into heterogeneity, by estimating the standard deviations. Delivery times and fastest pick-up show both pretty strong heterogeneity with a significant standard deviation of respectively 1.578 and 1.123 in the first attribute level. This means that there is a significant high variance between respondents. In the attribute delivery costs and pick-up costs a significant individual difference is shown, especially in the first two attribute levels, Free and €2.50. The attribute delivery timeslots shows with a standard deviation of 1.682 and 1.095 for the first two attribute levels (timeslot of respectively a whole day and a half day) a high individual difference. Hence, if it comes to preferences of respondents, delivery costs and costs for pick-up show the biggest variances between respondents, followed by delivery timeslots, delivery times and fastest pick-up.

4.4.3 Rural: Weekly groceries

The attributes fastest delivery, delivery times and fastest pick-up showed no significant standard deviation, when all attribute were included for the standard deviation parameters, see Appendix 14. The last output with only the significant standard deviations determined is shown in table 4.30. Hence for these attributes standard deviation parameters are not included in the model. For the other attributes the standard deviation of a normally distributed random component is estimated.

Table 4.30: ML model: rural area – weekly groceries

	Attribute	Attribute levels	β	P	St. dev	p
	Home delivery Constant		-4.46733	0.0000	4.11931	0.0000
Home delivery	Delivery costs	Free	1.56706	0.0000	1.65033	0.0000
		€ 2.50	0.65402	0.0033	0.19469	0.7340
		€ 5.00	-0.41558	0.1045	0.78228	0.0503
		€ 7.50	-1.8055			
	Delivery timeslots	Whole day	-0.24644	0.3077	0.63388	0.1274
		Half day (before or after 15.00)	0.10808	0.6205	0.50655	0.1622
		Timeslot of 4 hours	-0.17218	0.4697	0.77835	0.0423
		Timeslot of 2 hours	0.31054			
	Pick-up point constant		-5.52832	0.0000	3.00991	0.0000
Pick-up points	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.23924	0.4253	1.03696	0.0765
		7 days a week (8.00-22.00) with adjacent supermarket	0.44526	0.1273	0.76029	0.1959
		24 hours a day on weekdays and in the weekends (8.00-22.00), automated and without adjacent supermarket	-0.14400	0.6299	0.30226	0.7740
		24/7 opened, automated and without adjacent supermarket	-0.54050			
	Costs for pick-up	Free	1.41568	0.0001	1.40331	0.0052
		€ 2.50	0.39285	0.2107	0.31158	0.5651
		€ 5.00	0.11613	0.7043	0.53883	0.1910
		€ 7.50	-1.92466			
	Traveltime	0-10 minutes from home	0.96777	0.0106	1.58424	0.0211
		11-20 minutes from home	1.05480	0.0066	0.37546	0.4320
		21-30 minutes from home	-1.09340	0.0187	1.04957	0.0310
		31-40 minutes from home	-0.92917			
Non random	Fastest delivery	Same day	-0.51518	0.0409		
		Tomorrow	0.51518			
	Delivery times	Monday untill Saturday (8.00-22.00)	-0.13035	0.6183		
		7 days a week (8.00-22.00)	0.13035			
	Fastest Pick-up	Same day	-0.32131	0.3143		
		Tomorrow	0.32131			

By comparing the relative importance of attributes level in the ML model to the MNL model no major differences could be found. The ML model gives more insight into heterogeneity, by estimating the standard deviations. In the attribute delivery costs and pick-up costs a considerable individual difference is shown, especially in the first attribute level: Free. This means that there is a significant variance between respondents. The attribute delivery timeslots shows for all attribute levels a high individual difference, and the first attribute level of opening time of pick-up point, indicates a considerable individual difference in the first attribute level: Monday until Saturday (8.00-22.00) with adjacent supermarket. The first and third attribute level of travel time also shows a pretty high standard deviation, which indicates considerable individual differences. Hence, if it comes to preferences of respondents delivery costs and pick-up costs show the biggest variances between respondents, followed by travel time, opening times of the pick-up point and delivery timeslots.

4.4.4 Rural: Dinner party

The attributes delivery times, delivery timeslots, opening times pick-up point and fastest pick-up showed no significant standard deviation, when all attribute were included for the standard deviation parameters, see Appendix 15. The last output with only the significant standard deviations determined is shown in table 4.31. Hence for these attributes standard deviation parameters are not included in the model. For the other attributes the standard deviation of a normally distributed random component is estimated.

Table 4.31: ML model: rural area – dinner party

	Attribute	Attribute level	β	P	St. dev	p
	Constant Home delivery		-8.45975	0.0000	8.09109	0.0000
Home delivery	Fastest delivery	Same day	-0.90127	0.0271	1.94433	0.0000
		Tomorrow	0.90127		-1.94433	
	Delivery costs	Free	2.77932	0.0000	2.00702	0.0001
		€ 2.50	0.96978	0.0014	0.93678	0.0068
		€ 5.00	-1.1876	0.0008	0.14218	0.7595
		€ 7.50	-2.5615		-3.08598	
	Constant pick-up		-9.37753	0.0000	6.58493	0.0000
Pick-up points	Costs for pick-up	Free	2.74444	0.0000	0.58104	0.3385
		€ 2.50	0.85336	0.0404	1.99275	0.0001
		€ 5.00	-0.2483	0.5767	0.32614	0.6632
		€ 7.50	-3.3495		-2.89993	
	Traveltime	0-10 minutes from home	1.56160	0.0013	3.07701	0.0015
		11-20 minutes from home	1.62275	0.0010	1.10145	0.0188
		21-30 minutes from home	-0.35666	0.5377	1.16976	0.1247
		31-40 minutes from home	-2.82769		-5.34822	
Non random	Delivery times	Monday untill Saturday (8.00-22.00)	0.51329	0.1504		
		7 days a week (8.00-22.00)	-0.51329			
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.04818	0.9010		
		7 days a week (8.00-22.00) with adjacent supermarket	0.00591	0.9878		
		24 hours a day on weekdays and in the weekends (8.00-22.00), automated and without adjacent supermarket	0.3705	0.3432		
		24/7 opened, automated and without adjacent supermarket	-0.42459			
	Fastest Pick-up	Same day	-1.35422	0.0124		
		Tomorrow	1.35422			
	Delivery timeslots	Whole day	-0.4214	0.1657		
		Half day (before or after 15.00)	-1.11383	0.0007		
		Timeslot of 4 hours	0.39769	0.1490		
		Timeslot of 2 hours	1.13754			

By comparing the relative importance of attributes level in the ML model to the MNL model no major differences could be found. However the constants found in the ML model are closer to each other which indicates there is a smaller difference in preference between home delivery and pick-up. The ML model gives more insight into heterogeneity, by estimating the standard deviations.

Fastest delivery shows strong heterogeneity with a standard deviation of 1.944 in the first attribute level. In the attribute delivery costs and pick-up costs a considerable individual difference is shown,

especially in the first attribute level: Free. This means that there is a significant variance between respondents. In the attribute delivery costs and pick-up costs a considerable individual difference is shown, especially in the first two attribute levels: Free and €2.50. All attribute levels of travel time show a pretty high standard deviation, which indicates considerable individual differences. Hence, if it comes to preferences of respondents, travel time and delivery costs show the biggest variances between respondents, followed by pick-up costs and fastest delivery.

4.5 Conclusion

This chapter described the results of the experiment. There were differences found for the socio-demographics when comparing the sample or an urban area and the sample of a rural area. More females in a rural area, more people working part-time in a rural area, and less students. More people are working full-time in an urban area. In a rural area more people are in the age group of 40+ years, while in urban areas more people are in the age group 20-40 years. Respectively more people with a high income in the sample of the rural areas, and more more-person households with children. In the urban areas there are respectively more one person households.

With the MNL model the utility weights of 8 attributes were estimated. Those utility weights showed that for the scenario of weekly groceries in an urban area, the option home delivery is preferred over the option pick-up point. Decision makers preferred for home delivery, low delivery costs and for pick-up points, pick-up points opened 7 days a week with an adjacent supermarket with no pick-up fee. The utility weights for the scenario of hosting a dinner party in an urban area show that, the option home delivery is preferred over the option pick-up point. Decision makers preferred for home delivery, next day delivery and low delivery costs and for pick-up points, low pick-up costs. The utility weights for the scenario of weekly groceries in a rural area show that, the option home delivery is preferred over the option pick-up point. Decision makers preferred for home delivery, next day delivery with low delivery costs and for pick-up points, no pick-up fee and a short travel time (less than 20 minutes). The utility weights for the scenario of hosting a dinner party in a rural area show that, the option home delivery is preferred over the option pick-up point. Decision makers preferred for home delivery, low delivery costs and small delivery timeslots, and for pick-up points, low pick-up costs and a short travel time (less than 20 minutes).

With the LC model a three class model for the urban area considering the scenario of weekly groceries was estimated. For the rural area considering the scenario of weekly groceries a two class model could be estimated. For the scenario of dinner party no classes could be estimated. The classes found for the rural weekly groceries scenario, show significant differences for age group, frequency of buying food items online, regularity of buying fashion items online and familiarity with online weekly grocery shopping. The two segments are named with a name which corresponds with the preferences and characteristics of the respondents in it. Segment 1 of respondents living in a rural area considering the scenario of weekly groceries, seems to be a pretty traditional group. They are not particularly adaptive and most respondents are mid- aged. Hence the name “Rural traditional shoppers” is given. Segment 2 seems to be more adaptive towards online shopping, and online groceries shopping. Most respondents are young. Hence the name “Rural modern shoppers” is given.

The classes found for the urban weekly groceries scenario, show significant differences for gender, frequency of buying online, frequency of buying electronics online, percentage of fashion items

shopped online vs offline, familiarity with buying fashion items online, familiarity with buying electronics online, familiarity with online grocery shopping, familiarity with online weekly grocery shopping and familiarity with online grocery shopping for a special occasion. Segment 1 of respondents living in an urban area considering the scenario of weekly groceries, seems to be a pretty traditional group, they are not particularly adaptive and most respondents are females. Hence the name “Urban traditional shoppers” is given. Segment 2 seems to be more adaptive towards online shopping, and online groceries shopping. This group seems to be flexible, not the most adaptive not the most conservative. Hence the name “Urban flex shoppers” is given. Segment 3 shows as only segment a positive constants for pick-up point and home delivery, which indicates this groups prefers these options over going to the store themselves. This group seems to embrace changes, since it prefers online grocery shopping over traditional grocery shopping. Hence the name “Urban innovative shoppers”.

The ML model also estimated the utility weights of the attributes, but this time the standard deviations are also estimated. Which makes it possible to spot heterogeneity. The ML model of an urban area considering the scenario of weekly groceries shows heterogeneity in the attributes: fastest delivery, delivery costs, fastest pick-up and costs pick-up. Considering the scenario of hosting a dinner party heterogeneity is shown in the attributes: delivery times, delivery costs, delivery timeslots, fastest pick-up and costs of pick-up. The ML model of a rural area considering the scenario of weekly groceries shows heterogeneity in the attributes: delivery costs, delivery timeslots, opening time pick-up point, costs pick-up and travel time. Considering the scenario of hosting a dinner party heterogeneity is show in the attributes: fastest delivery, delivery costs and travel time.

5. Conclusion and Discussion

The aim of this research is to provide information for retailers to improve and optimize the usage of pick-up points, in a way that the customer is more satisfied and likely to choose the delivery option pick-up points. To fulfill this aim, the research questions and sub-questions need to be answered. In this chapter all the research questions will be discussed one by one. Also the limitations of this research and the experiments done will be discussed, so advice can be given for future research.

The main research question is as follows: **''What determinants influence the choice of customers for pick-up points versus home delivery during the customer journey of online grocery shopping and is there a relation with the socio demographics, psychographics and the general online shopping behavior of the customer?''**.

Previous studies found connections between socio-demographics and online shopping behavior. According to these findings the decision makers' characteristics, which have influence on the decision makers choice behavior if it comes to online shopping are: gender, age, education, income, job, household situation, available transport, travel time and living area (Alreck & Settle, 2002; Ferrell ,2005; Farag et al., 2007; Ren & Kwan, 2009; Hand et al., 2009; Cao et al., 2012; Weltevreden & Rietbergen, 2007 ; Naseri & Elliot ,2011; Zhou & Wang, 2014; Syndy, 2015). Following Konuş et al. (2008) shopping in a multichannel environment is a dynamic process that consists of search and purchase stages. They found differences in behavior based on six categories: shopping enjoyment, time pressure, innovation, loyalty, motivation to conform and price consciousness. Research of Hansen (2006) and Hand et al. (2009) state that the online shopping orientation, the compatibility with online shopping is depends on the past online shopping experiences and their familiarity with online shopping overall.

A survey with a stated choice experiment is conducted to ascertain preferences of respondents for the delivery phase of online grocery shopping. Stated choice experiments are able to examine preferences of customers in a hypothetical situation. Also the relative importance of other factors which have an influence on the choice behavior can be detected. Hypothetical choice situations are presented to decision makers, in a systematic way. Each respondent needed to choose several times which alternative in a certain choice set they preferred the most. By observing the choices the respondent made, it has been determined how the respondent's choice changed along with the change of attribute levels.

In the choice experiment respondents are split in two groups: respondents living in a rural area and respondents living in an urban area. Furthermore, two scenarios are considered: doing weekly groceries and hosting a dinner party. The stated choice experiment consists of three alternatives. The decision maker can choose between: pick-up point, home delivery or as a no preference option: going to the store themselves. The alternative pick-up point and home delivery have different attributes and attribute levels. These attributes are based on the literature study and the current offered services by Dutch supermarkets. For home delivery the attributes are: fastest delivery, delivery times, delivery costs and delivery timeslots, and for pick-up the attributes are: fastest pick-up, opening times pick-up, pick-up costs, and travel time from home.

5.1 Influence of the attributes

Now the sub-questions will be answered to give a more extensive answer on the main research question. The first sub-question is **''Which of the determinants: costs, travel time/distance, opening hours and combination with other services, influence the likeability to choose pick-up points as a delivery option and to what degree?''**. This question can be answered with the utility weights, which are determined with the MNL model. The utility weights for the scenario of weekly groceries in an urban area of the MNL model show that the option home delivery is preferred over the option pick-up point. The attribute levels which cause a higher likelihood of decision makers choosing for home delivery in a descending manner are: free delivery costs and delivery costs of €2.50, and for pick-up points: no pick-up fee and pick-up points opened 7 days a week with an adjacent supermarket. The utility weights for the scenario of hosting a dinner party in an urban area show that the option home delivery is preferred over the option pick-up point. The attribute levels which cause a higher likelihood of decision makers choosing for home delivery in a descending manner are: free delivery costs and delivery costs of €2.50, and next day delivery, and for pick-up points: free pick-up and a pick-up fee of €2.50.The utility weights for the scenario of weekly groceries in a rural area show that the option home delivery is preferred over the option pick-up point. The attribute levels which cause a higher likelihood of decision makers choosing for home delivery in a descending manner are: next day delivery, free delivery costs and delivery costs of €2.50, and for pick-up points: a travel time of 0-10 minutes from home, a travel time of 11-20 minutes from home and no pick-up fee. The utility weights for the scenario of hosting a dinner party in a rural area show that the option home delivery is preferred over the option pick-up point. The attribute levels which cause a higher likelihood of decision makers choosing for home delivery in a descending manner are: free delivery costs and delivery costs of €2.50, a delivery timeslot of 2 hours and a delivery timeslot of 4 hours, and for pick-up points: a travel time of 0-10 minutes from home and a travel time of 11-20 minutes from home, free pick-up and a pick-up fee of €2.50. Note that in all living areas and scenarios, home delivery is preferred over pick-up.

The ML model estimates besides utility weights also the standard deviations, which makes it possible to spot heterogeneity. In an urban area considering the scenario of weekly groceries the ML model shows heterogeneity in the attributes: opening time of pick-up point, fastest delivery, costs for pick-up and delivery cost.. Considering the scenario of hosting a dinner party heterogeneity is show in the attributes: delivery times, delivery costs, delivery timeslots, fastest pick-up and costs of pick-up. The ML model of a rural area considering the scenario of weekly groceries shows heterogeneity in the attributes: delivery costs, delivery timeslots, opening time pick-up point, costs pick-up and travel time. Considering the scenario of hosting a dinner party heterogeneity is show in the attributes: fastest delivery, delivery costs and travel time. As well the ML models as the MNL models have a good goodness-of-fit, although the ML shows in comparison higher.

Table 5.1 shows the findings from the MNL model combined with the findings from the ML model. The bullet point with the light blue color show heterogeneity, which means there is a significant difference in variances between respondents in the sample.

Table 5.1: Findings MNL model and ML model combined

Urban Area Weekly Groceries • free delivery costs and delivery costs of €2.50, • no pick-up fee • pick-up points opened 7 days a week with an adjacent supermarket
Urban Area Dinner Party • free delivery costs and delivery costs of €2.50 • next day delivery • free pick-up and a pick-up fee of €2.50.
Rural Area Weekly Groceries • next day delivery, free delivery costs and delivery costs of €2.50 • travel time of 0-10 minutes from home, a travel time of 11-20 minutes from home • no pick-up fee.
Rural Area Dinner Party • free delivery costs and delivery costs of €2.50 • delivery timeslot of 2 hours and a delivery timeslot of 4 hours, • travel time of 0-10 minutes from home and a travel time of 11-20 minutes from home • free pick-up and a pick-up fee of €2.50.

The Latent Class model was able to find 2 segments for the scenario of doing weekly groceries in a rural area and 3 segments for the scenario of doing weekly groceries in an urban area. These segments are named after their choice behavior, some segments have a more traditional mindset, some a more modern, flexible or innovative mindset.

Rural Modern Shoppers prefer next day delivery with the lowest possible delivery costs (more than €5 has a negative influence on the likelihood of choosing home delivery) and free pick-up within 20 minutes from home. Home delivery is preferred over going to the stores themselves, pick-up is not. Rural Traditional Shoppers find themselves less pressed for time and score higher for the psychographic category motivation to conform. The respondents in these segments prefer free delivery, a pick-up point which is open 7 days a week (8.00-22.00) with adjacent supermarket and free pick-up within 10 minutes of travel time from home. The option home delivery is preferred over the option pick-up.

Urban Traditional Shoppers prefer going to the stores themselves over home delivery and pick-up. None of the other attribute levels has a significant influence. Urban Flex Shoppers prefer low delivery costs (more than €5 has a negative influence on the likelihood of choosing home delivery), and a pick-up point which is open 7 days a week (8.00-22.00) with adjacent supermarket and no pick-up costs. The option pick-up is preferred of the option home delivery, but going to the store themselves is preferred over both. Urban Innovative Shoppers prefer same day pick-up. Home delivery is overall preferred over pick-up, but both options are preferred over going to the store themselves.

5.2 Influence of socio demographics

The sub-question: **''Which socio demographic characteristics explain the likeability of choosing pick-up points or home delivery as a delivery option and to which extent do they explain the choice behavior?''** can be answered with the findings of the chi-square test and estimations of the Pearson correlation coefficients. The socio-demographics differ between the sample of the urban area and the sample of the rural area. There are more females in a rural area, and respectively more people with a high income in the sample of the rural areas, and more households with children. In the urban areas there are respectively more one-person households. Which corresponds with the fact that there are more one-person households in urban areas, and more families in rural areas with a higher income (CBS, 2000).

With chi-square tests and by determining Pearson's correlation relations were found between demographics. In urban areas males are more often highly educated. In general females work more often part-time or do not have a paid job, while males more often work full-time. Males tend to live more often alone or in more person households, while females often live in a household with children. A high education goes hand in hand with a full-time job, while low or average education often goes hand in hand with a part-time job or no paid job. People working full-time have a higher income. Most people, who work fulltime, live in a household with children. This lines up with the previous findings, as respondents who live in a household with children more often have a full-time job so have a high income.

Two segments found by the LC model for rural areas considering the scenario of weekly groceries show a connection between the age and the choice behavior. Mid aged respondents, 25-50 years, prefer free delivery, a pick-up point which is open 7 days a week (8.00-22.00) with adjacent supermarket and free pick-up within 10 minutes of travel time from home. The option home delivery is preferred over the option pick-up. Young respondents prefer next day delivery with low delivery costs (more than €5 has a negative influence on the likelihood of choosing home delivery) and free pick-up within 20 minutes from home. Home delivery is preferred over going to the stores themselves, pick-up is not. The three segments found by the LC model for urban areas considering the scenario of weekly groceries show an connection between the gender and the preferences, so the choice behavior. The segment with most females prefers going to the stores themselves over home delivery and pick-up. The segment with the average amount of females prefers low delivery costs (more than €5 has a negative influence on the likelihood of choosing home delivery), and a pick-up point which is open 7 days a week (8.00-22.00) with adjacent supermarket and no pick-up costs. The option pick-up is preferred over the option home delivery, but going to the store themselves is preferred over both. The segment with the least females prefers same day pick-up. Home delivery is overall preferred over pick-up, but both options are preferred over going to the store themselves.

5.3 Influence of psychographics

The sub-question: ***''Which psychographic characteristics explain the likeability of choosing pick-up points or home delivery as a delivery option and to which extent do they explain the choice behavior?''*** can be answered with the conducted independent sample T-tests and an one-way ANOVA. With a T-test there are three psychographics found which have significant difference

between the respondents living in an urban and rural area: innovation, loyalty and price consciousness. For the categories loyalty and price consciousness there is an equality of variances of the corresponding category for different living areas, and for the categories price consciousness and innovation the mean difference is significant. Which means there is a significant difference between the means of the living areas.

Looking at the segments determined with the LC model of a rural area considering the scenario of weekly groceries. Rural Modern Shoppers find themselves more pressed for time, and score lower for the psychographic category motivation to conform compared to Rural Traditional Shoppers.

Looking at the segments determined with the LC model of an urban area considering the scenario of weekly groceries, Urban Innovative Shoppers find themselves most pressed for time, than Urban Traditional Shoppers. Urban Traditional Shoppers and Urban Flex Shoppers enjoy shopping more than Urban Innovative Shoppers and Urban Flex Shoppers and Urban Innovative Shoppers score higher on the psychographic category innovativeness.

5.4 Influence of online shopping orientation/ behavior

The sub-question: ***"Which online shopping behavior characteristics explain the likeability of choosing pick-up points or home delivery as a delivery option and to which extent do they explain the choice behavior?"*** is researched on two levels. The relations between online shopping behavior and the living area, and the relation between online shopping orientation and segments determined with the LC model. Several aspects differ between the rural and urban areas, people living in a rural area are more likely to buy electronics and fashion items online, while people living in an urban area are more likely to buy food items online, especially for special occasions. People living in a rural area buying electronics online are likely to spent more money per order, more than €75.-, however people living in urban areas buy respectively more electronics online versus offline.

Looking at the segments determined with the LC model of a rural area considering the scenario of weekly groceries. Rural Traditional Shoppers buy less frequent food items online, are less likely to have bought food items online in the last 2 years, buy less regularly fashion items online, and are less likely to buy weekly groceries online. Rural Traditional Shoppers prefer free delivery, a pick-up point which is open 7 days a week (8.00-22.00) with adjacent supermarket and free pick-up within 10 minutes of travel time from home. The option home delivery is preferred over the option pick-up. The respondents is Rural Modern Shoppers buy more frequent food items online, are more likely to have bought food items online in the last 2 years, buy more regularly fashion items online, and are more likely to buy weekly groceries online. The respondents in this segment prefer next day delivery with low delivery costs (more than €5 has a negative influence on the likelihood of choosing home delivery) and free pick-up within 20 minutes from home. Home delivery is preferred over going to the stores themselves, pick-up is not.

Looking at the segments determined with the LC model of an urban area considering the scenario of weekly groceries, Urban Traditional Shoppers shop the least frequent online in general and the least frequent electronics, Urban Flex Shoppers more often, and Urban Innovative Shoppers the most. Urban Traditional Shoppers shop the least fashion items, food items, weekly groceries, groceries for a special occasion, Urban Flex Shoppers more often and Urban Innovative Shoppers the most. Urban

Innovative Shoppers are least likely to shop electronics online, Urban Traditional Shoppers more, and Urban Flex Shoppers the most. The respondents in Urban Traditional Shoppers do the least fashion shopping online versus offline, Urban Flex Shoppers more and Urban Innovative Shoppers the most. Urban Traditional Shoppers prefer going to the stores themselves over home delivery and pick-up. None of the other attribute levels has a significant influence. Urban Flex Shoppers prefer low delivery costs (more than €5 has a negative influence on the likelihood of choosing home delivery), and a pick-up point which is open 7 days a week (8.00-22.00) with adjacent supermarket and no pick-up costs. The option pick-up is preferred of the option home delivery, but going to the store themselves is preferred over both. Urban Innovative Shoppers prefer same day pick-up. Home delivery is overall preferred over pick-up, but both options are preferred over going to the store themselves.

By combining all the findings discussed earlier, some in direct conclusions can be made. Rural Traditional Shoppers, are mostly older respondents, who live in a more person household without children. They more often have a low or medium income. Rural Modern shoppers are mostly younger respondents, they have more often a full-time job and a high income, and live in a household with children.

Urban Traditional Shoppers have more often an older age, are medium or low educated, work part-time or have no paid job and live more often in a household with children. Urban Innovative Shoppers are younger, more often highly educated, working full-time and live in one-person households. The Urban Flex Shoppers are in the middle of these two segments.

It is clear that the segments which are most adaptive of online grocery shopping have different characteristics depending on the living area. In the rural area these are the people with a high income, between 25 and 50 years, with a family and a full-time job, while in urban area the most adaptive people are younger than 25 years or between 25 and 50 years, highly educated, working full-time and living in a one-person household.

5.5 Limitations and further research

This research provided insight in the determinants which influence the choice behavior of decision makers in the delivery phase of online grocery shopping, but some limitations can be remarked. The sample is divided into two sub samples: urban and rural. The distinction between the two is made by asking the respondents to make a choice. A few attributes belonging to an urban area and a rural area are given to make to choice more clear, but there is a possibility the respondents choose the wrong alternative. A possible solution for this is to ask zip codes and have the survey programmed in such a way it recognizes the area by zip code and sends it automatically to the right stated choice experiment, the urban or the rural one. For this experiment this was difficult since the program used to gather the data in the form of a survey did not support these kinds of options.

One other limitation can be found in the stated choice experiment. A stated choice experiment works with hypothetical situation, so it can never be the same as a situation in real life. By describing scenarios in detail the situation, is tried to make as real as possible. Text it used to do this and there is a table shown with the attributes of pick-up points and home delivery. When ordering groceries in real life this will not look like this, since it will be on a website of a retailer. A possibility to fix this is making use of a ‘‘fake’’ website or using the revealed choice approach.

Another limitation is the number of attributes taken into account, it is only possible to take a limited amount of attributes into account. There are 8 attributes taken into account, but also factors like the branding of the retailer were a customer orders and user friendliness of the order website can possibly have an influence on the choices made in real life. A solution for this is adding additional questions about the influence of these factors. The answers possibly give more insight into their choice behavior. Since this survey already consists of a lot of additional questions, even more questions can lead to less reliable results, since it can lead to fatigues. So the decision is made to leave this out.

Another issue which requires attention in the sample, only 18.6% of the respondents in the sample is male. It is unclear if the findings are applicable to the whole population, since the percentage males in the population is closer to 50%. Although females probably more often buy groceries and following Naseri & Elliot (2011) online buyers of food and groceries are more likely to be purchased by women, for future research it is a point of attention.

5.6 Managerial implications

The last sub question is***: ''What advice can be given to companies concerning to pick-up points and home delivery, to match the customers' preferences?'',*** which can be answered by combining all the findings discussed in previous sections.

At the moment home delivery is in general preferred over pick-up. If retailers want to boost their usage of pick-up points in an urban area, they should provide pick-up points which are open 7 days a week (8.00-22.00) with an adjacent supermarket where it is possible to pick-up online ordered groceries below a cost of €5. If retailers want to promote doing weekly groceries online, regular customers should be offered free pick-up, for special occasions customers are willing to pay for pick-up. If retailers want to boost their usage of the service home delivery the costs should not be more than €5 and next day delivery should be a possibility.

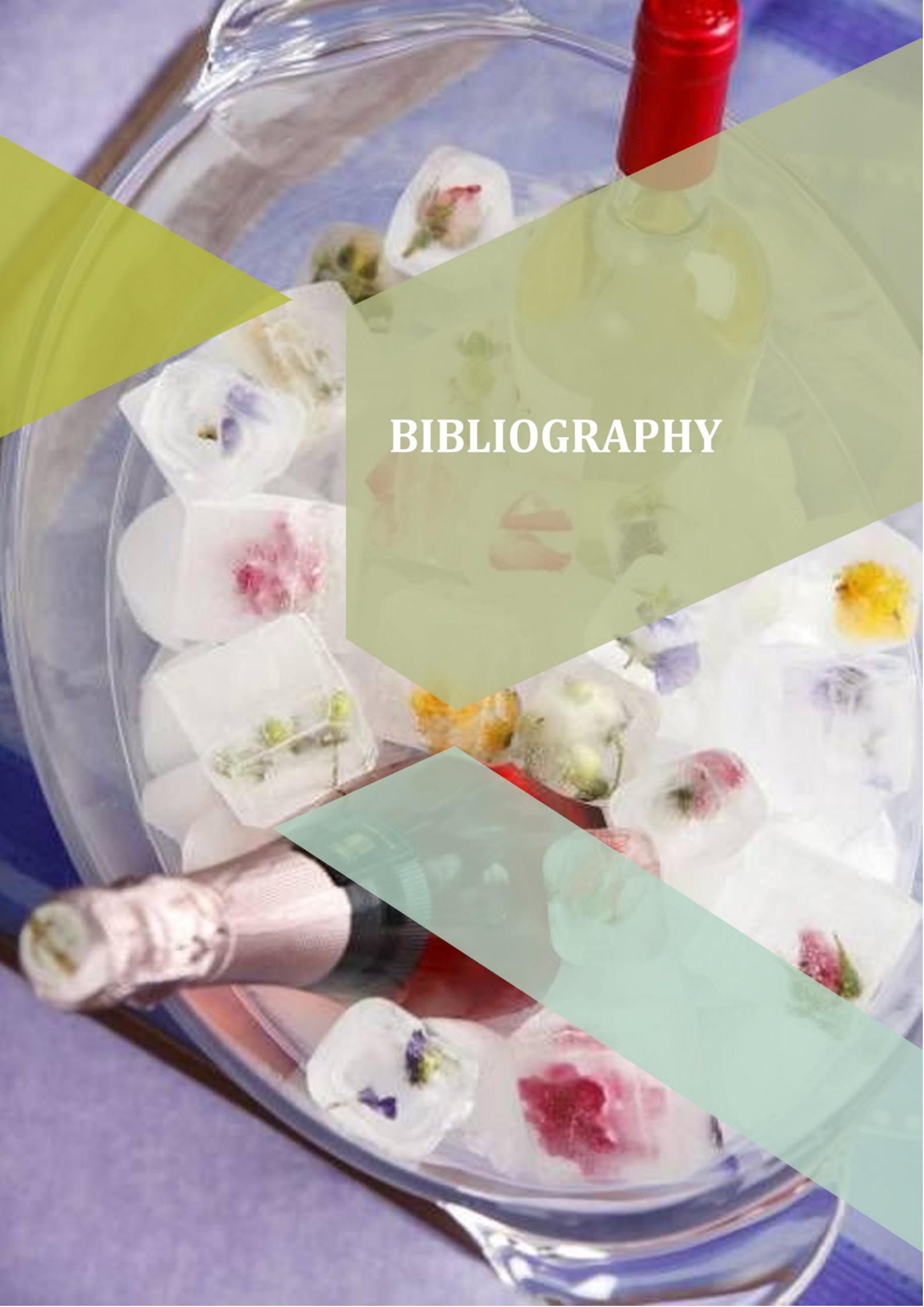
They should definitely not forget the male grocery shoppers, since males tend to be more into online grocery shopping if they do grocery shopping. Customers who ordered online before, and the frequent users are way more likely to do it again, so stimulating them with discounts or personal attention as well offline as online can be very useful.

If retailers want to boost their usage of pick-up points in a rural area, they should provide pick-up points where it is possible to pick-up online ordered groceries below a cost of €5, within a range of a maximum travel time of 20 minutes from customers' homes. If retailers want to promote doing weekly groceries online, regular customers should be offered free pick-up, for special occasions customers are willing to pay for pick-up. If retailers want to boost their usage of the service home delivery the costs should be not more than €5, next day delivery should be a possibility and delivery timeslots of max 4 hours should be offered, preferably even 2 hours.

The focus of retailers should be on the rural modern shoppers, the urban flex shoppers and urban innovative shoppers. Which means they should focus on younger grocery shoppers and the shoppers which are used to ordering products online. By taking indirect relationships into account in rural areas, companies should focus on people with a high income, between 25 and 50 years, with a family and a full-time job. One thing that stood out is that these people regularly shop fashion online. By

taking indirect relationships into account in urban areas companies should focus on people younger than 25 years or between 25 and 50 years, highly educated, working full-time and living in a one-person household. They are frequent online shoppers, if they are into buying electronics online they do it quite frequently and they shop a lot of their fashion items online instead of in-store.

Hence combining services can be a good idea for companies who own as well online grocery shops as electronic or fashion shops online. Since this makes it easier to reach the group who is most interested. Also advertising on fashion or electronic sites can help to reach this group. It is an interesting find since the group interested in online grocery shopping following this experiment seems to be quite small, not more than 30% of the population. So it is case to target the right people when companies want to expand their online grocery shopping business.



BIBLIOGRAPHY

Bibliography

Albert Heijn. (2016). Retrieved from https://www.ah.nl/over-ah/geschiedenis/1900

Alders, M. (2003). Demografie van gezinnen. *Bevolkingstrends: Statistisch kwartaalblad over de demografie van Nederland*, 51, 31-4.

Alreck, P. L., & Settle, R. B. (2002). The hurried customer: Time-saving perceptions of Internet and catalogue shopping. *Journal of Database Marketing & Customer Strategy Management*, 10 (1), 25-35.

Arentze, T., Borgers, A., & Timmermans, H. (1993). A model of multi-purpose shopping trip behavior. *Papers in Regional Science*, 72 (3), 239-256.

Aylott, R., & Mitchell, V-W. (1998). An exploratory study of grocery shopping stressors. *International Journal of Retail and Distribution Management*, 26 (9), 362-73.

Babin, B. J., Darden, W. R., & Griffin, M. (1994), Work and/or fun: measuring hedonic and utilitarian shopping value. *Journal of Customer Research*, 20 (4), 644-56.

Baker, M. (2000). Online grocery shopping - time for stock –taking. *ICSC Research Quarterly*, 7 (1), 1-4.

Baydar, O., Melser, C., & Zuurmond, M. CBS (2010, September 7). Supermarket within walking distance for most Dutch people. *Centraal Bureau voor de Statistiek*. Retrieved from https://www.cbs.nl/en-gb/news/2010/36/supermarket-within-walking-distance-for-most-dutch-people.

Bensinger, G. (2015, June 12). Amazon Expands Prime With Goods Shipped Directly From Merchants. Retrieved from http://blogs.wsj.com/digits/2015/06/12/amazon-expands-prime-with-goods-shipped-directly-from-merchants/.

Bhattacharya, G. (2004). The impacts of quickness, price, payment risk, and delivery issues on on-line shopping. *The Journal of Socio-Economics*, 33 (2), 241-251.

Binder, J. (2014). C Study 1: Online Integration and Willingness to Pay. In *Online Channel Integration* (pp. 65-90). Springer Fachmedien Wiesbaden.

Bloch P. H., & Richins, M. I. (1983). A theoretical model for the study of product important perceptions. *Journal of Marketing*, 47 (3), 69-81.

Borgers, A. W. J., Gunsing, M., & Timmermans, H. J. P. (1991). Teleshopping and the dynamics of urban retail systems: some numerical simulations. *Spatial Analysis and Population Dynamics*, 229-242.

Boyer, K. K., Prud'homme, A. M., & Chung, W. (2009). The last mile challenge: evaluating the effects of customer density and delivery window patterns. *Journal of Business Logistics*, 30 (1), 185-201.

Brady, M. K., & Cronin Jr, J. J. (2001). Some new thoughts on conceptualizing perceived service quality: a hierarchical approach. *Journal of marketing*, 65 (3), 34-49.

Brengman, M., Heuens, M., Weijters, B., Smith, S. M., & Swinyard, W. R. (2005). Segmenting internet shoppers based on their web-usage related lifestyle: a cross cultural validation. *Journal of Business Research*, 58 (1), 79-88.

Brown, M., Pope, N., & Voges, K. (2003). Buying or browsing? An exploration of shopping orientations and online purchase intention. *European Journal of Marketing*, 37 (11/12), 1666-84.

Butler, S. (2000, March 4). Tesco and rivals turn against huge stores as internet shopping takes over. *The Guardian*. Retrieved from https://www.theguardian.com/business/2012/mar/04/online-shopping-changes-hypermarket-strategy.

Cao, X., Xu, Z., & Douma, F. (2012). The interactions between e-shopping and traditional in-store shopping: an application of structural equations model. *Transportation*, 39 (5), 957–974.

Cascetta, E. (2009). Random utility theory. *Transportation systems analysis*, 89-167.

CBS. (2016). Meer Nederlands shoppen online. *Centraal Bureau voor de Statistiek*. Retrieved from https://www.cbs.nl/nl-nl/nieuws/2016/24/meer-nederlanders-shoppen-online.

CBS. (2000). Nederland in delen: Stad en land. In *Index*, 2, retrieved from https://www.cbs.nl/NR/rdonlyres/EBBAEF84-ACDB-491E-BA8D-799E8F15035E/0/index1018.pdf

Childers, T. L., Carr, C. L., Peck, J., & Carson, S. (2002). Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of retailing*, *77* (4), 511-535.

Chocarro, R., Cortiñas, M., & Villanueva, M. L. (2013). Situational variables in online versus offline channel choice. *Electronic Commerce Research and Applications*, 12 (5), 347-361.

Clark, K. R. (2000). Grocery shopping online vs. on land: Customers prefer to walk the aisles. PricewaterhouseCoopers' survey reports. Retrieved from http://www.pwc.com/extweb/ncpressrelease.nsf/docid/E5AB218CAE54206B852568D40052790E.

Close, A. G., & Kukar-Kinney, M., (2010). Beyond buying: motivations behind customers' online shopping cart use. J. Bus. Res. 63 (9), 986–992.

DHL. (2017). Dhlparcel.nl. Retrieved November 28, 2017, from https://www.dhlparcel.nl/nl/particulier/service/pakketten-verzenden

Dowling, G.R., & Staelin R. (1994). A model of perceived risk and intended risk-handling activity. *Journal of Customer Research*, 21 (1), 119-34.

Ecommerce News europe. (2015). Online grocery retail in Europe. *Ecommerce News europe*. Retrieved from http://ecommercenews.eu/the-state-of-online-grocery-retail-in-europe/.

Ecommerce News europe. (2014). Click & Drive extremely popular in France. *Ecommerce News europe*. Retrieved from https://ecommercenews.eu/click-drive-extremely-popular-in-france/.

Edwards, J., McKinnon, A., Cherrett, T., McLeod, F., & Song, L. (2010). The CO2 Benefits of Using Collection/Delivery Points for Failed Home Deliveries. *Transportation Research Record*, 10 (1901), 136-43

Engel, J. F., Blackwell, R. D., & Miniard, P. W. (1995). Customer behavior, 8th. *New York: Dryder*.

Ertell, K. (2010). The Missing Links in the Customer Engagement Cycle. Retrieved March 9, 2017, from http://www.retailshakennotstirred.com/retail-shaken-not-stirred/2010/01/the-missing-link-in-the-customer-engagement-cycle.html.

European Commission. (2013). Special Eurobarometer 398 / Wave EB79.2. Retrieved November 9, 2016, from http://ec.europa.eu/public_opinion/archives/ebs/ebs_398_en.pdf.

Eurostat. (2017). E-commerce statistics for individuals - About two thirds of internet users in the EU shopped online in 2016. Retrieved from http://ec.europa.eu/eurostat/statistics-explained/index.php/E-commerce_statistics_for_individuals.

Farag, S., Schwanen, T., Dijst, M., & Faber, J. (2007). Shopping online and/or in-store? A structural equation model of the relationships between e-shopping and in-store shopping. *Transportation Research Part A: Policy and Practice*, 41 (2), 125-141.

Farag, S., Schwanen, T., & Dijst, M., (2005). Empirical investigation of online searching and buying and their relationship to shopping trips. Transp. Res. Rec. 1926, 242–251.

Ferrell, C. (2004). Home-based teleshoppers and shopping travel: Do teleshoppers travel less?. Transportation Research Record: Journal of the Transportation Research Board, (1894), 241-248.

Ferrell, C. (2005). Home-based teleshoppers and shopping travel: where do people find the time? Transp. Res. Rec. 1926, 212–223.

Field, A. (2009). *Discovering statistics using SPSS*. Sage publications.

Ganesh, J., Reynolds, K.E., Luckett, M., & Pomirleanu, N. (2010). Online shopper motivations, and e-store attributes: an examination of online patronage behavior and shopper typologies. *Journal of Retailing*, 86 (1), 106–115.

Geuens, M., Brengman, M., & S'Jegers, R. (2003). Food retailing: now and in the future: A customer perspective, *Journal of Retailing and Customer Services*, vol. 10 no. 4, pp. 241-251.

Grewal, D., Iyer, G. R., & Levy, M. (2004). Internet retailing: enablers, limiters and market consequences. *Journal of Business Research*, 57 (7), 703-713.

Giuliano, G. (2013). Synthesis of freight research in urban transportation planning (Vol. 23). Transportation Research Board.

Hampson, D. P., & McGoldrick, P. J. (2013). A typology of adaptive shopping patterns in recession. *Journal of Business Research*, 66 (7), 831–838.

Hamrick, K. S., & Hopkins, D. (2012). The time cost of access to food -Distance to the grocery store as measured in minutes. *International Journal of Time Use Research*, 9 (1), 28-58.

Hand, C., Dall'Olmo Riley, F., Harris, P., Singh, J., & Rettie, R. (2009). Online grocery shopping: the influence of situational factors. *European journal of Marketing*, *43* (9/10), 1205-1219.

Hansen, T. (2006). Determinants of customers' repeat online buying of groceries. *International Review of Retail, Distribution and Customer Research*, 16 (1), 93-114.

Hanson, S. (1980). The importance of the multi-purpose journey to work in urban travel behavior. *Transportation*, 9 (3), 229-248.

Hensher, D. A., Rose, J. M., & Greene, W. H. (2015). Applied Choice Analysis (Second edition). Cambridge, United Kingdom: Cambridge University Press.

Houston, M. J., & Rothschild M. J. (1978). Conceptual and methodological perspectives on involvement, *AMA Educators' Proceedings*, 184-187.

Huang, Y., & Oppewal, H. (2006). Why customers hesitate to shop online: An experimental choice analysis of grocery shopping and the role of delivery fees. *International Journal of Retail & Distribution Management*, 34 (4/5), 334-353.

Hübner, A., Kuhn, H., & Wollenburg, J. (2016). Last mile fulfilment and distribution in omni-channel grocery retailing. *International Journal of Retail& Distribution Management,* 44 (3), 228-247.

Iwan, S., Kijewska, K., & Lemke, J. (2016). Analysis of parcel lockers' efficiency as the last mile delivery solution – the results of the research in Poland. *Transportation Research Procedia, 12*, 644-655.

Iyer, R., & Eastman, J. K. (2006). The elderly and their attitudes toward the internet: the impact on internet use, purchase, and comparison shopping. *Journal of Marketing Theory and Practice*, 14 (1), 57-67.

Jiang, P., & Rosenbloom, B. (2005). Customer intention to return online: price perception, attribute-level performance, and satisfaction unfolding over time. *European Journal of Marketing*, 39 (1/2), 150-174.

Kalakota, R., & Robinson, M. (1999). e-Business 2.0: Roadmap for Success. *Addison-Wesley Information Technology Series*.

Kenneally, E. (2015). Blog: The innovations driving futuristic delivery methods. Retrieved November 24, 2016, from https://www.retail-week.com/analysis/opinion/supply-chain-blog/blog-the-innovations-driving-futuristic-delivery-methods/5074601.article.

Kinsey, J., & Senauer, B. (1996). Consumer trends and changing food retailing formats. American Journal of Agricultural Economics, 78(5), 1187-1191.

Kline, D. B. (2015). Is Amazon Making a Mistake With Two New Delivery Methods?. Retrieved from http://www.fool.com/investing/general/2015/06/22/is-amazon-making-a-mistake-with-two-new-delivery-m.aspx.

Konuş, U., Verhoef, P. C., & Neslin, S. A. (2008). Multichannel shopper segments and their covariates. *Journal of Retailing*, 84 (4), 398-413.

Koyuncu, C., & Bhattacharya, G. (2004). The impacts of quickness, price, payment risk, and delivery issues on on-line shopping. *The Journal of Socio-Economics*, 33 (2), 241-251.

Limayem, M., Khalifa, M., & Frini, A. (2000). What makes customers buy from Internet? A longitudinal study of online shopping. *IEEE Transactions on Systems, Man, and Cybernetics-Part A: Systems and Humans*, 30 (4), 421-432.

Mangiaracina, R., & Brugnoli, G. (1970). The ecommerce customer journey: A model to assess and compare the user experience of the ecommerce websites. *The Journal of Internet Banking and Commerce*, 14 (3), 1-11.

Mangiaracina, R., Brugnoli, G., & Perego, A. (2009). The eCommerce Customer Journey: A Model to Assess and Compare the User Experience of the eCommerce Websites. *Journal of Internet Banking and Commerce*, 14.

McLeod, F. N., Cherrett, T., & Song, L., (2006). Transport impacts of local collection/delivery points. *International Journal of Logistics Research and Applications*, 9 (3), 307–317.

Morganosky, M. A., & Cude, B. J. (2000). Customer response to online grocery shopping. *International Journal of Retail & Distribution Management*, 28 (1), 17-26.

Morganti, E., Seidel, S., Blanquart, C., Dablanc, L., & Lenz, B. (2014). The impact of e-commerce on final deliveries alternative parcel delivery services in France and Germany. *Transportation Research Procedia, 4*, 178-190.

Nakamura, D., Yamanaka, K., Kim S.H., Ohno, Y., & Arihara, Y. (2015). The analysis of customer value on Omni-channel: Based on integratice methods. Retrieved from http://ibintercollege.org/wp-content/uploads/2016/01/IB-H-P%E7%89%88-PDF.pdf.

Naseri, M. B., & Elliott, G. (2011). Role of demographics, social connectedness and prior internet experience in adoption of online shopping: Applications for direct marketing. *Journal of Targeting, Measurement and Analysis for Marketing*, 19 (2), 69-84.

Nenonen, S., Rasila, H., Junnonen, J. M., & Kärnä, S. (2008). Customer Journey–a method to investigate user experience. In *Proceedings of the Euro FM Conference Manchester,* 54-63.

Nicholson, M., Clarke, I., & Blakemore, M. (2002). 'One brand, three ways to shop': situational variables and multichannel customer behaviour. *The International Review of Retail, Distribution and Customer Research*, 12 (2), 131-148.

Paazl. (2016). Onderzoek: afhaalpunten groeien in populariteit, vooral in studentensteden. Retrieved from https://www.paazl.com/nl/onderzoek-afhaalpunten-groeien-in-populariteit/

Park, C. H., & Kim, Y. G. (2003). Identifying key factors affecting customer purchase behavior in an online shopping context. *International Journal of Retail & Distribution Management*, 31 (1), 16-29.

Prus, R. (1991). Just browsing, thanks: focused and diffused shopping practices. *The American Marketing Winter Educators' Conference*, 296-302.

Quix, F., Terra, J., Hamann, E., & Wortel, C. (2011). Het Nieuwe Winkelen. Hoofdbedrijfschap Detailhandel. *INRetail*.

Ren, F., Kwan, M. P. (2009). The impact of geographic context on e-shopping behavior. *Environment and Planning B: Urban Analytics and City Science*, 36 (2), 262–278.

Rob, J. M., Kemperman, A. D. A. M., & Borgers, A. W. J. (2016). Product availability as an omni channel coordination strategy : an empirical study into consumers' preference towards an online product availability insight. *Eindhoven: Technische Universiteit Eindhoven*.

Rowley, J. (2004). Online branding. Online information review, 28(2), 131-138. Saleh, K. (2016, April 10). E-commerce Product Return Rate - Statistics and Trend. Retrieved from http://www.invespcro.com/blog/ecommerce-product-return-rate-statistics/.

Sartain, J. (2011). The History Of Ecommerce: How Did It All Begin?. Retrieved**,** from http://www.miva.com/blog/the-history-of-ecommerce-how-did-it-all-begin/.

Sashi, C. M. (2012). Customer engagement, buyer-seller relationships, and social media. *Management decision*, 50 (2), 253-272.

Schewe, C. D. (1988). Marketing to our aging population: Responding to physiological changes. *Journal of Customer Marketing*, 5 (3), 61-73.

Smith, M. F, & Dickinson R. A. (1994). An empirical investigation of changing and sustaining shopping enjoyment. *Dissertation Abstracts International. A, Humanities and Social Sciences*, 50 (8), 2575.

So, Y., & Kuhfeld, W. F. (1995). Multinomial logit models. *SUGI 20 conference proceedings*, 1227-1234.

Srinivasan, N., & Ratchford, B. T. (1991). An empirical test of a model of external search for automobiles. *Journal of Customer research*, 18 (2), 233-242.

Syndy. (2015). The State of Online Grocery Retail in Europe 2015: an extensive guide for retailers and FMCG brands on key egrocery market developments and trends across Europe and the US. Retrieved from http://www.syndy.com/report-the-state-of-online-grocery-retail-2015/.

Teller, C., Kotzab, H., & Grant, D. B. (2006). The customer direct services revolution in grocery retailing: An exploratory investigation. *Managing Service Quality: An International Journal*, 16 (1), 78-96.

Thole, H. (2017). In de wachtrij voor online supermarket Picnic: waarom je niet meteen klant kunt worden. *Business Insider Nederland*. Retrieved from https://www.businessinsider.nl/picnic-wachtrij-utrecht-den-haag-almere/.

Timmermans, H. (1988). Multipurpose trips and individual choice behaviour: an analysis using experimental design data. *Behavioural modelling in geography and planning*, 356-67.

Timmermans, H., Borgers, A., & Gunsing, M. (1991). The potential adoption of teleshopping technologies in a spatial context: a decompositional choice experiment. *International Review of Retail, Distribution and Customer Research*, 1 (5), 549-567.

Train, K. (2009). *Discrete choice models with simulation (2nd ed.)* Cambridge, UK: Cambridge University Press.

To, P.L., Liao, C., & Lin, T. H. (2007). Shopping motivations on Internet: a study based on utilitarian and hedonic value. *Technovation*, 27 (12), 774–787.

van Delft, L. (2013). Omni channel shopping behaviour during the customer journey. *Eindhoven: Technische Universiteit Eindhoven*.

Van Duin, J. H. R., de Goffau, W., Wiegmans, B., Tavasszy, L. A., & Saes, M. (2016). Improving home delivery efficiency by using principles of address intelligence for B2C deliveries. *Transportation Research Procedia*, 12, 14-25.

Van Strien, A., & Wierenga, B. (2009). Bezuinigen door consumenten tijdens de recessie. *Economisch-Statistische Berichten (ESB)*, 94 (4573), 726-729.

Volkskrant (2001). Albert moet internet veroveren voor AH - Archief - Voor nieuws, achtergronden en columns. Retrieved November 30, 2017, from https://www.volkskrant.nl/archief/albert-moet-internet-veroveren-voor-ah~a603619/

Wallop, H. (2013). Click and collect – the new way to go shopping. *The Telegraph*. Retrieved from http://www.telegraph.co.uk/finance/newsbysector/retailandcustomer/9785532/Click-and-collect-the-new-way-to-go-shopping.html.

Weltevreden, J. W. (2007). Substitution or complementarity? How the Internet changes city centre shopping. *Journal of Retailing and customer Services*, *14* (3), 192-207

Weltevreden, J.W.J., & Rietbergen, T.V. (2007). E-shopping versus city centre shopping: the role of perceived city centre attractiveness. *Tijdschrift voor economische en sociale geografie*, 98 (1), 68-85.

Whelan, R. (2015). Parcel-Delivery Firms and Retailers Experiment With Package Pickup Points. Retrieved from https://www.wsj.com/articles/parcel-delivery-firms-and-retailers-experiment-with-package-pickup-points-1431966679

White, G.K. (1998). Specialty Food and Drink on the Internet Project: Highlights. Retrieved May 15, 2017, from http://www.ume.maine.edu/~specfood.

Yu, H. C., Hsi, K. H., & Kuo, P. J. (2002). Electronic payment systems: an analysis and comparison of types. *Technology in Society*, 24 (3), 331-347.

Zhang, H., & Li, H. (2006). Factors affecting payment choices in online auctions: A study of eBay traders. *Decision Support Systems*, 42 (2), 1076-1088.

Zhou, Y., & Wang, X. C. (2014). Explore the relationship between online shopping and shopping trips: an analysis with the 2009 NHTS data. *Transportation Research Part A: Policy and Practice*, 70, 1-9.

Appendices

Contents

1. Design experiment

ChoiceSet	HD_Fast	HD_App	HD_Cost	HD_Time	PP_Fast	PP_Open	PP_Cost	PP_Trav_Urb	PP_Trav_Rur
1	1	1	3	4	2	2	2	1	1
2	2	2	1	3	2	3	2	1	4
3	1	2	1	4	1	4	2	2	3
4	2	1	1	2	2	2	1	2	2
5	2	1	1	1	2	4	4	1	4
6	1	2	2	2	2	3	2	1	2
7	2	2	4	3	2	1	4	1	3
8	2	1	4	2	2	4	3	2	1
9	2	2	3	1	1	2	4	2	2
10	1	2	4	4	1	2	4	2	4
11	2	2	2	2	1	2	3	1	3
12	1	2	2	1	2	1	3	2	4
13	1	1	4	2	1	1	2	2	4
14	2	2	3	2	1	4	1	1	4
15	2	1	3	3	1	1	2	2	2
16	1	2	3	1	2	3	1	2	3
17	1	1	1	2	1	3	4	2	3
18	1	1	4	1	1	3	3	1	2
19	2	2	2	1	1	4	2	2	1
20	2	2	4	4	2	3	1	2	1
21	1	2	4	3	1	4	1	1	2
22	2	1	2	4	1	1	1	1	3
23	1	1	3	3	2	4	3	2	3
24	2	1	3	4	1	3	3	1	4
25	1	1	2	4	2	4	4	1	2
26	1	2	1	3	1	2	3	1	1
27	2	2	1	4	2	1	3	2	2
28	2	1	2	3	1	3	4	2	1
29	1	1	1	1	1	1	1	1	1
30	1	1	2	3	2	2	1	2	4
31	2	1	4	1	2	2	2	1	3
32	1	2	3	2	2	1	4	1	1

2. Survey Questions

Socio-demographics		
Gender	What is your gender? *Wat is uw geslacht?*	Male Female
Age	What is your birth year? *Wat is uw geboortejaar?*	….
Education	What is the highest level of education you have completed? *Wat is de door u hoogst afgeronde opleiding?* (Based on CBS)	No education Primary school v(m)bo, lts, lbo, huishoudschool MAVO, (M)ULO, VMBO-t, MBO-short MBO, MTS, MEAO HAVO, VWO, Gymnasium, HBS HBO, HEAO, PABO, HTS University, PhD Other, namely: . . . .
Income	What is your net disposable household income per month? *Wat is het netto inkomen van uw huishouden per maand?*	Less than € 625 € 626 - € 1250 € 1251 - € 1875 € 1876 - € 2500 € 2501 - € 3125 € 3126 or more I don't know/ I prefer to not tell
Occupation	Are you now employed full-time, part-time, not employed, a student, or retired? *Wat is uw beroep?*	Full time (equal to or more than 32 hours/week) Part-time (less than 32 hours/week) Not employed I am a student I am retired Other,…
Household	What is your household situation? *Wat is de samenstelling van uw huishouden?*	Living at home One person household Living together with partner without children Living together with partner with youngest child between 0-11 year Living together with partner with youngest child 12 or older One parent household with youngest child between 0-11 year One parent household with youngest child 12 or older Living in a studenthouse Other, namely …
Travel mode	To which means of transportation do you have access? *Welk vervoersbewijs heeft u tot uw beschikking?*	Car Motorbike Bike Scooter Public transport

Travel time	How long do you travel to work or school using the most used transportation mode? (one-way) *Welk vervoersbewijs heeft u tot uw beschikking?*	0-15 min 15-30 min 30-45 min 45-60 min More than an hour
Urban density	What is your home zip code? (4 digits) *Wat is uw postcode? (4 cijfers)*	. . . .

General shopping orientation using psychographic characteristics **Measured on a 5 points scale: totally agree – totally disagree**	**Konuş et al. (2008)**
Shopping enjoyment	I like shopping *Ik vind het leuk om te winkelen* I take my time when I shop *Ik neem de tijd om te winkelen*
Time pressure	I am always busy *Ik heb het altijd druk* I usually find myself pressed for time *Ik ondervind vaak tijdsdruk*
Innovativeness	I regularly purchase different variants of a product just for a change *Ik koop vaak verschillende varianten van een product om af te wisselen* I am one of those people who try a new product firstly just after the launch *Ik probeer nieuwe producten meteen nadat ze geïntroduceerd zijn* I find it boring to use the same product (or brand) repetitively. *Ik vind het saai om hetzelfde productmerk herhaaldelijk te gebruiken* I like to try new and different products. *Ik vind het leuk om nieuwe en verschillende producten te proberen* I always have the newest gadgets. *Ik heb altijd de nieuwste gadgets*
Loyality	I generally do my shopping in the same way *Ik doe mijn aankopen meestal op dezelfde manier* The brand of the product is important for me in my purchase decisions *Het merk van het product speelt een belangrijke rol in mijn aankoopbeslissing* I generally purchase the same brands. *Ik koop meestal dezelfde merken* The place where I do my shopping is very important to me *De locatie waar ik mijn aankopen doe is erg belangrijk voor mij*
Motivation to conform	Being accepted by other people is very important to me. *Geaccepteerd worden door anderen is erg belangrijk voor mij* I find it very boring when other people criticize my behaviors *Ik vind het erg vervelend als anderen kritiek geven op mijn gedrag* I like to have some problems that I can solve without much thinking. *Ik vind het fijn om problemen op te lossen zonder veel na te denken*
Price awareness	It is important for me to pay the best price for the product. *Ik vind het belangrijk om de beste prijs voor een product te betalen* I compare the prices of various products before I make a choice. *Ik vergelijk prijzen van verschillende producten voordat ik een keuze maak.*

Online shopping behavior/orientation		
Product type	Which of the following products did you shop online in the last two years (choose the product category)? *Welk van de volgende producten heeft u in de afgelopen twee jaar online gekocht (kies de productcategorie)?* If: yes: ask per category	Fashion: Clothing (also sports), shoes, bags. make-up, jewelry, living accessories, etc. Electronics: Smartphones, laptops, TV's. laundry machines, games, e-books etc., Food: weekly groceries as well as special occasion groceries (for example a BBQ or dinner party). I never shop online ➔ end of this part
Frequency	How often do you shop online in general? *Hoe vaak winkelt u over het algemeen online?*	Every two weeks or more often Once a month Once every two months Once every three months Once a half year Once per year Less than once a year
	How often do you shop for fashion online? *Hoe vaak winkelt u online voor mode?*	Every two weeks or more often Once a month Once every two months Once every three months Once a half year Once per year Less than once a year
	How much money do you spend on fashion products online on average per order? *Hoe veel geld spendeerde u gemiddeld per keer dat u mode kocht online?*	0-25 euro 26-50 euro 51-75 euro 76-100 euro More than 100 euro
	Which share of your total shopping time for fashion products do you spend online? *Hoeveel procent van uw totale winkeltijd (zowel offline als online) voor mode spendeerde u online?*	0-25 percent 26-50 percent 51-75 percent 76-100 percent
	How often do you shop for electronics online? *Hoe vaak winkelt u online voor elektronica?*	Every two weeks or more often Once a month Once every two months Once every three months Once a half year Once per year Less than once a year
	How much money do you spend on electronics online on average per order?	0-25 euro 26-50 euro

	Hoe veel geld spendeerde u gemiddeld per keer dat u elektronica kocht online?	51-75 euro 76-100 euro More than 100 euro
	Which share of your total shopping time for electronics do you spend online? *Hoeveel procent van uw totale winkeltijd (zowel offline als online) voor elektronica spendeerde u online?*	0-25 percent 26-50 percent 51-75 percent 76-100 percent

Food		
	How often do you shop food online? *Hoe vaak winkelt u online voor supermarktproducten?*	Every two weeks or more often Once a month Once every two months Once every three months Once a half year Once per year Less than once a year
	How much money do you spend on food products online on average per order? *Hoe veel geld spendeerde u gemiddeld per keer dat u supermarktproducten kocht online?*	0-25 euro 26-50 euro 51-75 euro 76-100 euro More than 100 euro
	Which share of your total shopping time for food products do you spend online? *Hoeveel procent van uw totale winkeltijd (zowel offline als online) voor supermarktproducten spendeerde u online?*	0-25 percent 26-50 percent 51-75 percent 76-100 percent
	For which occasion do you buy food online? *Voor welke gelegenheid koopt u supermarktproducten online?*	Weekly groceries Special events Both Other, namely….

3. Socio demographics of sample

LivingArea					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	319	59.4	59.4	59.4
	Rural	218	40.6	40.6	100.0
	Total	537	100.0	100.0	

Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	98	18.2	18.2	18.2
	Middle	290	54.0	54.0	72.3
	High	149	27.7	27.7	100.0
	Total	537	100.0	100.0	

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Younger than 25	93	17.3	17.3	17.3
	25-50	343	63.9	63.9	81.2
	50+	101	18.8	18.8	100.0
	Total	537	100.0	100.0	

Job					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full-time	118	22.0	22.0	22.0
	Part-time	148	27.6	27.6	49.5
	No job	271	50.5	50.5	100.0
	Total	537	100.0	100.0	

4. Socio demographics vs living area

LivingArea * Households						
			Households			Total
			One-person household	More person household	Household with childern	
LivingArea	Urban	Count	66	117	136	319
		% within LivingArea	20.7%	36.7%	42.6%	100.0%
	Rural	Count	27	83	108	218
		% within LivingArea	12.4%	38.1%	49.5%	100.0%
Total		Count	93	200	244	537
		% within LivingArea	17.3%	37.2%	45.4%	100.0%

Chi-Square Tests of LivingArea * Households			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.585[a]	2	.037
Likelihood Ratio	6.790	2	.034
Linear-by-Linear Association	5.454	1	.020
N of Valid Cases	537		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 37.75.

LivingArea * Gender					
			Gender		Total
			Male	Female	
LivingArea	Urban	Count	55	264	319
		% within LivingArea	17.2%	82.8%	100.0%
	Rural	Count	19	199	218
		% within LivingArea	8.7%	91.3%	100.0%
Total		Count	74	463	537
		% within LivingArea	13.8%	86.2%	100.0%

Chi-Square Tests of LivingArea * Gender					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7.923[a]	1	.005		
Continuity Correction[b]	7.221	1	.007		
Likelihood Ratio	8.325	1	.004		
Fisher's Exact Test				.005	.003
Linear-by-Linear Association	7.908	1	.005		
N of Valid Cases	537				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 30.04.

LivingArea * Income						
			Income			Total
			Low	Middle	High	
LivingArea	Urban	Count	124	95	46	265
		% within LivingArea	46.8%	35.8%	17.4%	100.0%
	Rural	Count	63	70	46	179
		% within LivingArea	35.2%	39.1%	25.7%	100.0%
Total		Count	187	165	92	444
		% within LivingArea	42.1%	37.2%	20.7%	100.0%

Chi-Square Tests of LivingArea * Income			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.303[a]	2	.026
Likelihood Ratio	7.306	2	.026
Linear-by-Linear Association	7.272	1	.007
N of Valid Cases	444		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 37.09.

5. Relationships between demographics variables

Gender * Age * LivingArea							
LivingArea				Age			Total
				Younger than 25	25-50	50+	
Urban	Gender	Male	Count	17	35	3	55
			% within Gender	30.9%	63.6%	5.5%	100.0%
		Female	Count	46	167	51	264
			% within Gender	17.4%	63.3%	19.3%	100.0%
	Total		Count	63	202	54	319
			% within Gender	19.7%	63.3%	16.9%	100.0%
Rural	Gender	Male	Count	1	15	3	19
			% within Gender	5.3%	78.9%	15.8%	100.0%
		Female	Count	29	126	44	199
			% within Gender	14.6%	63.3%	22.1%	100.0%
	Total		Count	30	141	47	218
			% within Gender	13.8%	64.7%	21.6%	100.0%
Total	Gender	Male	Count	18	50	6	74
			% within Gender	24.3%	67.6%	8.1%	100.0%
		Female	Count	75	293	95	463
			% within Gender	16.2%	63.3%	20.5%	100.0%
	Total		Count	93	343	101	537
			% within Gender	17.3%	63.9%	18.8%	100.0%

Chi-Square Tests				
LivingArea		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	9.360[b]	2	.009
	Likelihood Ratio	10.385	2	.006
	Linear-by-Linear Association	9.273	1	.002
	N of Valid Cases	319		
Rural	Pearson Chi-Square	2.069[c]	2	.355
	Likelihood Ratio	2.368	2	.306
	Linear-by-Linear Association	.044	1	.833
	N of Valid Cases	218		
Total	Pearson Chi-Square	7.840[a]	2	.020
	Likelihood Ratio	8.822	2	.012
	Linear-by-Linear Association	7.439	1	.006
	N of Valid Cases	537		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.82.
b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.31.
c. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.61.

Gender * Education							
Living area				Education			Untilal
				Low	Middle	High	
Urban	Gender	Male	Count	1	21	36	58
			% within Gender	1.7%	36.2%	62.1%	100.0%
		Female	Count	59	161	66	286
			% within Gender	20.6%	56.3%	23.1%	100.0%
	Untilal		Count	60	182	102	344
			% within Gender	17.4%	52.9%	29.7%	100.0%
Rural	Gender	Male	Count	4	11	8	23
			% within Gender	17.4%	47.8%	34.8%	100.0%
		Female	Count	39	118	52	209
			% within Gender	18.7%	56.5%	24.9%	100.0%
	Untilal		Count	43	129	60	232
			% within Gender	18.5%	55.6%	25.9%	100.0%

Chi-Square Tests of Gender * Education				
Living area		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	38.284[a]	2	.000
	Likelihood Ratio	39.328	2	.000
	Linear-by-Linear Association	35.343	1	.000
	N of Valid Cases	344		
Rural	Pearson Chi-Square	1.081[b]	2	.582
	Likelihood Ratio	1.025	2	.599
	Linear-by-Linear Association	.587	1	.444
	N of Valid Cases	232		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.12.
b. 1 cell (16.7%) has expected count less than 5. The minimum expected count is 4.26.

Gender * Incomes							
Living area				Incomes			Untilal
				Low	Middle	High	
Urban	Gender	Male	Count	19	17	13	49
			% within Gender	38.8%	34.7%	26.5%	100.0%
		Female	Count	117	90	37	244
			% within Gender	48.0%	36.9%	15.2%	100.0%
	Untilal		Count	136	107	50	293
			% within Gender	46.4%	36.5%	17.1%	100.0%
Rural	Gender	Male	Count	5	7	10	22
			% within Gender	22.7%	31.8%	45.5%	100.0%
		Female	Count	59	66	43	168
			% within Gender	35.1%	39.3%	25.6%	100.0%
	Untilal		Count	64	73	53	190
			% within Gender	33.7%	38.4%	27.9%	100.0%

Chi-Square Tests of Gender * Incomes				
Living area		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	3.883[a]	2	.143
	Likelihood Ratio	3.564	2	.168
	Linear-by-Linear Association	3.128	1	.077
	N of Valid Cases	293		
Rural	Pearson Chi-Square	3.919[b]	2	.141
	Likelihood Ratio	3.652	2	.161
	Linear-by-Linear Association	3.286	1	.070
	N of Valid Cases	190		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.36.
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.14.

Gender * Job * LivingArea							
LivingArea				Job			Total
				Full-time	Part-time	No paid job	
Urban	Gender	Male	Count	26	3	26	55
			% within Gender	47.3%	5.5%	47.3%	100.0%
		Female	Count	46	75	143	264
			% within Gender	17.4%	28.4%	54.2%	100.0%
	Total		Count	72	78	169	319
			% within Gender	22.6%	24.5%	53.0%	100.0%
Rural	Gender	Male	Count	12	1	6	19
			% within Gender	63.2%	5.3%	31.6%	100.0%
		Female	Count	34	69	96	199

			% within Gender	17.1%	34.7%	48.2%	100.0%
	Total		Count	46	70	102	218
			% within Gender	21.1%	32.1%	46.8%	100.0%
Total	Gender	Male	Count	38	4	32	74
			% within Gender	51.4%	5.4%	43.2%	100.0%
		Female	Count	80	144	239	463
			% within Gender	17.3%	31.1%	51.6%	100.0%
	Total		Count	118	148	271	537
			% within Gender	22.0%	27.6%	50.5%	100.0%

Chi-Square Tests

LivingArea		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	28.184[b]	2	.000
	Likelihood Ratio	28.557	2	.000
	Linear-by-Linear Association	9.239	1	.002
	N of Valid Cases	319		
Rural	Pearson Chi-Square	23.149[c]	2	.000
	Likelihood Ratio	20.090	2	.000
	Linear-by-Linear Association	11.086	1	.001
	N of Valid Cases	218		
Total	Pearson Chi-Square	49.882[a]	2	.000
	Likelihood Ratio	48.754	2	.000
	Linear-by-Linear Association	17.841	1	.000
	N of Valid Cases	537		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.26.
b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.41.
c. 1 cell (16.7%) has expected count less than 5. The minimum expected count is 4.01.

Gender * Households * LivingArea

LivingArea				Households			Total
				One-person household	More person household	Household with childern	
Urban	Gender	Male	Count	19	26	10	55
			% within Gender	34.5%	47.3%	18.2%	100.0%
		Female	Count	47	91	126	264
			% within Gender	17.8%	34.5%	47.7%	100.0%
	Total		Count	66	117	136	319
			% within Gender	20.7%	36.7%	42.6%	100.0%
Rural	Gender	Male	Count	7	4	8	19
			% within Gender	36.8%	21.1%	42.1%	100.0%
		Female	Count	20	79	100	199
			% within Gender	10.1%	39.7%	50.3%	100.0%
	Total		Count	27	83	108	218
			% within Gender	12.4%	38.1%	49.5%	100.0%
Total	Gender	Male	Count	26	30	18	74
			% within Gender	35.1%	40.5%	24.3%	100.0%
		Female	Count	67	170	226	463
			% within Gender	14.5%	36.7%	48.8%	100.0%
	Total		Count	93	200	244	537
			% within Gender	17.3%	37.2%	45.4%	100.0%

Chi-Square Tests

LivingArea		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	17.521[b]	2	.000
	Likelihood Ratio	18.654	2	.000
	Linear-by-Linear Association	16.616	1	.000

	N of Valid Cases	319			
Rural	Pearson Chi-Square	11.868[c]	2	.003	
	Likelihood Ratio	9.013	2	.011	
	Linear-by-Linear Association	4.379	1	.036	
	N of Valid Cases	218			
Total	Pearson Chi-Square	24.402[a]	2	.000	
	Likelihood Ratio	22.845	2	.000	
	Linear-by-Linear Association	23.671	1	.000	
	N of Valid Cases	537			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.82.
b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.38.
c. 1 cell (16.7%) has expected count less than 5. The minimum expected count is 2.35.

Age * Job * LivingArea

LivingArea				Job			Total
				Full-time	Part-time	No job	
Urban	Age	Younger than 25	Count	14	10	39	63
			% within Age	22.2%	15.9%	61.9%	100.0%
		25-50	Count	52	59	91	202
			% within Age	25.7%	29.2%	45.0%	100.0%
		50+	Count	6	9	39	54
			% within Age	11.1%	16.7%	72.2%	100.0%
	Total		Count	72	78	169	319
			% within Age	22.6%	24.5%	53.0%	100.0%
Rural	Age	Younger than 25	Count	4	5	21	30
			% within Age	13.3%	16.7%	70.0%	100.0%
		25-50	Count	40	51	50	141
			% within Age	28.4%	36.2%	35.5%	100.0%
		50+	Count	2	14	31	47
			% within Age	4.3%	29.8%	66.0%	100.0%
	Total		Count	46	70	102	218
			% within Age	21.1%	32.1%	46.8%	100.0%
Total	Age	Younger than 25	Count	18	15	60	93
			% within Age	19.4%	16.1%	64.5%	100.0%
		25-50	Count	92	110	141	343
			% within Age	26.8%	32.1%	41.1%	100.0%
		50+	Count	8	23	70	101
			% within Age	7.9%	22.8%	69.3%	100.0%
	Total		Count	118	148	271	537
			% within Age	22.0%	27.6%	50.5%	100.0%

Chi-Square Tests

LivingArea		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	16.268[b]	4	.003
	Likelihood Ratio	16.982	4	.002
	Linear-by-Linear Association	1.485	1	.223
	N of Valid Cases	319		
Rural	Pearson Chi-Square	24.752[c]	4	.000
	Likelihood Ratio	27.572	4	.000
	Linear-by-Linear Association	1.250	1	.263
	N of Valid Cases	218		
Total	Pearson Chi-Square	37.512[a]	4	.000
	Likelihood Ratio	40.331	4	.000
	Linear-by-Linear Association	2.513	1	.113
	N of Valid Cases	537		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 20.44.
b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.19.

c. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.33.

Age * Households * LivingArea							
LivingArea				Households			Total
				One-person household	More person household	Household with childern	
Urban	Age	Younger than 25	Count	11	36	16	63
			% within Age	17.5%	57.1%	25.4%	100.0%
		25-50	Count	43	53	106	202
			% within Age	21.3%	26.2%	52.5%	100.0%
		50+	Count	12	28	14	54
			% within Age	22.2%	51.9%	25.9%	100.0%
	Total		Count	66	117	136	319
			% within Age	20.7%	36.7%	42.6%	100.0%
Rural	Age	Younger than 25	Count	5	11	14	30
			% within Age	16.7%	36.7%	46.7%	100.0%
		25-50	Count	15	39	87	141
			% within Age	10.6%	27.7%	61.7%	100.0%
		50+	Count	7	33	7	47
			% within Age	14.9%	70.2%	14.9%	100.0%
	Total		Count	27	83	108	218
			% within Age	12.4%	38.1%	49.5%	100.0%
Total	Age	Younger than 25	Count	16	47	30	93
			% within Age	17.2%	50.5%	32.3%	100.0%
		25-50	Count	58	92	193	343
			% within Age	16.9%	26.8%	56.3%	100.0%
		50+	Count	19	61	21	101
			% within Age	18.8%	60.4%	20.8%	100.0%
	Total		Count	93	200	244	537
			% within Age	17.3%	37.2%	45.4%	100.0%

Chi-Square Tests				
LivingArea		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	29.516[b]	4	.000
	Likelihood Ratio	29.769	4	.000
	Linear-by-Linear Association	.015	1	.901
	N of Valid Cases	319		
Rural	Pearson Chi-Square	33.461[c]	4	.000
	Likelihood Ratio	35.325	4	.000
	Linear-by-Linear Association	6.413	1	.011
	N of Valid Cases	218		
Total	Pearson Chi-Square	55.027[a]	4	.000
	Likelihood Ratio	56.565	4	.000
	Linear-by-Linear Association	1.906	1	.167
	N of Valid Cases	537		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.11.
b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.17.
c. 1 cell (11.1%) has expected count less than 5. The minimum expected count is 3.72.

Education * Job * LivingArea							
LivingArea				Job			Total
				Full-time	Part-time	No job	
Urban	Education	Low	Count	5	11	38	54
			% within Education	9.3%	20.4%	70.4%	100.0%
		Middle	Count	27	47	93	167
			% within Education	16.2%	28.1%	55.7%	100.0%

		High	Count	40	20	34	94
			% within Education	42.6%	21.3%	36.2%	100.0%
	Total		Count	72	78	165	315
			% within Education	22.9%	24.8%	52.4%	100.0%
Rural	Education	Low	Count	2	12	28	42
			% within Education	4.8%	28.6%	66.7%	100.0%
		Middle	Count	29	37	56	122
			% within Education	23.8%	30.3%	45.9%	100.0%
		High	Count	15	21	18	54
			% within Education	27.8%	38.9%	33.3%	100.0%
	Total		Count	46	70	102	218
			% within Education	21.1%	32.1%	46.8%	100.0%
Total	Education	Low	Count	7	23	66	96
			% within Education	7.3%	24.0%	68.8%	100.0%
		Middle	Count	56	84	149	289
			% within Education	19.4%	29.1%	51.6%	100.0%
		High	Count	55	41	52	148
			% within Education	37.2%	27.7%	35.1%	100.0%
	Total		Count	118	148	267	533
			% within Education	22.1%	27.8%	50.1%	100.0%

Chi-Square Tests

LivingArea		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	33.646[b]	4	.000
	Likelihood Ratio	32.302	4	.000
	Linear-by-Linear Association	27.068	1	.000
	N of Valid Cases	315		
Rural	Pearson Chi-Square	13.581[c]	4	.009
	Likelihood Ratio	15.694	4	.003
	Linear-by-Linear Association	11.589	1	.001
	N of Valid Cases	218		
Total	Pearson Chi-Square	39.725[a]	4	.000
	Likelihood Ratio	40.684	4	.000
	Linear-by-Linear Association	37.988	1	.000
	N of Valid Cases	533		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.25.
b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.34.
c. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.86.

Education * Households * LivingArea

LivingArea				Households			Total
				One-person household	More person household	Household with childern	
Urban	Education	Low	Count	12	14	28	54
			% within Education	22.2%	25.9%	51.9%	100.0%
		Middle	Count	28	60	79	167
			% within Education	16.8%	35.9%	47.3%	100.0%
		High	Count	25	41	28	94
			% within Education	26.6%	43.6%	29.8%	100.0%
	Total		Count	65	115	135	315
			% within Education	20.6%	36.5%	42.9%	100.0%
Rural	Education	Low	Count	6	19	17	42
			% within Education	14.3%	45.2%	40.5%	100.0%
		Middle	Count	19	46	57	122
			% within Education	15.6%	37.7%	46.7%	100.0%
		High	Count	2	18	34	54
			% within Education	3.7%	33.3%	63.0%	100.0%

	Total		Count	27	83	108	218
			% within Education	12.4%	38.1%	49.5%	100.0%
Total	Education	Low	Count	18	33	45	96
			% within Education	18.8%	34.4%	46.9%	100.0%
		Middle	Count	47	106	136	289
			% within Education	16.3%	36.7%	47.1%	100.0%
		High	Count	27	59	62	148
			% within Education	18.2%	39.9%	41.9%	100.0%
	Total		Count	92	198	243	533
			% within Education	17.3%	37.1%	45.6%	100.0%

Chi-Square Tests

LivingArea		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	11.406[b]	4	.022
	Likelihood Ratio	11.825	4	.019
	Linear-by-Linear Association	5.707	1	.017
	N of Valid Cases	315		
Rural	Pearson Chi-Square	8.155[c]	4	.086
	Likelihood Ratio	9.210	4	.056
	Linear-by-Linear Association	5.937	1	.015
	N of Valid Cases	218		
Total	Pearson Chi-Square	1.498[a]	4	.827
	Likelihood Ratio	1.506	4	.826
	Linear-by-Linear Association	.345	1	.557
	N of Valid Cases	533		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.57.
b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.14.
c. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.20.

Income * Job * LivingArea

LivingArea				Job			Total
				Full-time	Part-time	No job	
Urban	Income	Low	Count	9	22	93	124
			% within Income	7.3%	17.7%	75.0%	100.0%
		Middle	Count	31	25	39	95
			% within Income	32.6%	26.3%	41.1%	100.0%
		High	Count	20	17	9	46
			% within Income	43.5%	37.0%	19.6%	100.0%
	Total		Count	60	64	141	265
			% within Income	22.6%	24.2%	53.2%	100.0%
Rural	Income	Low	Count	5	14	44	63
			% within Income	7.9%	22.2%	69.8%	100.0%
		Middle	Count	19	22	29	70
			% within Income	27.1%	31.4%	41.4%	100.0%
		High	Count	18	19	9	46
			% within Income	39.1%	41.3%	19.6%	100.0%
	Total		Count	42	55	82	179
			% within Income	23.5%	30.7%	45.8%	100.0%
Total	Income	Low	Count	14	36	137	187
			% within Income	7.5%	19.3%	73.3%	100.0%
		Middle	Count	50	47	68	165
			% within Income	30.3%	28.5%	41.2%	100.0%
		High	Count	38	36	18	92
			% within Income	41.3%	39.1%	19.6%	100.0%
	Total		Count	102	119	223	444
			% within Income	23.0%	26.8%	50.2%	100.0%

Chi-Square Tests				
LivingArea		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	54.876[b]	4	.000
	Likelihood Ratio	59.083	4	.000
	Linear-by-Linear Association	51.583	1	.000
	N of Valid Cases	265		
Rural	Pearson Chi-Square	30.010[c]	4	.000
	Likelihood Ratio	32.238	4	.000
	Linear-by-Linear Association	28.146	1	.000
	N of Valid Cases	179		
Total	Pearson Chi-Square	85.855[a]	4	.000
	Likelihood Ratio	92.636	4	.000
	Linear-by-Linear Association	80.431	1	.000
	N of Valid Cases	444		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.14.
b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.42.
c. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.79.

Income * Job Crosstabulation						
			Job			Total
			Full-time	Part-time	No job	
Income	Low	Count	14	36	111	161
		% within Income	8.7%	22.4%	68.9%	100.0%
	Middle	Count	50	47	45	142
		% within Income	35.2%	33.1%	31.7%	100.0%
	High	Count	38	36	9	83
		% within Income	45.8%	43.4%	10.8%	100.0%
Total		Count	102	119	165	386
		% within Income	26.4%	30.8%	42.7%	100.0%

Chi-Square Tests of Income * Job Crosstabulation			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	92.963[a]	4	.000
Likelihood Ratio	101.982	4	.000
Linear-by-Linear Association	84.303	1	.000
N of Valid Cases	386		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.93.

Income * Households * LivingArea							
LivingArea				Households			Total
				One-person household	More person household	Household with childern	
Urban	Income	Low	Count	30	49	45	124
			% within Income	24.2%	39.5%	36.3%	100.0%
		Middle	Count	23	28	44	95
			% within Income	24.2%	29.5%	46.3%	100.0%
		High	Count	6	18	22	46
			% within Income	13.0%	39.1%	47.8%	100.0%
	Total		Count	59	95	111	265
			% within Income	22.3%	35.8%	41.9%	100.0%
Rural	Income	Low	Count	13	15	35	63
			% within Income	20.6%	23.8%	55.6%	100.0%
		Middle	Count	10	34	26	70
			% within Income	14.3%	48.6%	37.1%	100.0%
		High	Count	0	17	29	46
			% within Income	0.0%	37.0%	63.0%	100.0%

	Total		Count	23	66	90	179
			% within Income	12.8%	36.9%	50.3%	100.0%
Total	Income	Low	Count	43	64	80	187
			% within Income	23.0%	34.2%	42.8%	100.0%
		Middle	Count	33	62	70	165
			% within Income	20.0%	37.6%	42.4%	100.0%
		High	Count	6	35	51	92
			% within Income	6.5%	38.0%	55.4%	100.0%
	Total		Count	82	161	201	444
			% within Income	18.5%	36.3%	45.3%	100.0%

Chi-Square Tests

LivingArea		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	5.565[b]	4	.234
	Likelihood Ratio	5.929	4	.205
	Linear-by-Linear Association	2.987	1	.084
	N of Valid Cases	265		
Rural	Pearson Chi-Square	18.751[c]	4	.001
	Likelihood Ratio	24.494	4	.000
	Linear-by-Linear Association	3.367	1	.067
	N of Valid Cases	179		
Total	Pearson Chi-Square	12.418[a]	4	.015
	Likelihood Ratio	14.513	4	.006
	Linear-by-Linear Association	7.636	1	.006
	N of Valid Cases	444		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.99.
b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.24.
c. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.91.

Households * Job * LivingArea Crosstabulation

LivingArea				Job			Total
				Full-time	Part-time	No job	
Urban	Households	One-person household	Count	27	10	29	66
			% within Households	40.9%	15.2%	43.9%	100.0%
		More person household	Count	24	22	71	117
			% within Households	20.5%	18.8%	60.7%	100.0%
		Household with childern	Count	21	46	69	136
			% within Households	15.4%	33.8%	50.7%	100.0%
	Total		Count	72	78	169	319
			% within Households	22.6%	24.5%	53.0%	100.0%
Rural	Households	One-person household	Count	10	5	12	27
			% within Households	37.0%	18.5%	44.4%	100.0%
		More person household	Count	15	22	46	83
			% within Households	18.1%	26.5%	55.4%	100.0%
		Household with childern	Count	21	43	44	108
			% within Households	19.4%	39.8%	40.7%	100.0%
	Total		Count	46	70	102	218
			% within Households	21.1%	32.1%	46.8%	100.0%
Total	Households	One-person household	Count	37	15	41	93
			% within Households	39.8%	16.1%	44.1%	100.0%
		More person household	Count	39	44	117	200
			% within Households	19.5%	22.0%	58.5%	100.0%
		Household with childern	Count	42	89	113	244
			% within Households	17.2%	36.5%	46.3%	100.0%
	Total		Count	118	148	271	537
			% within Households	22.0%	27.6%	50.5%	100.0%

Chi-Square Tests				
LivingArea		Value	df	Asymp. Sig. (2-sided)
Urban	Pearson Chi-Square	24.321[b]	4	.000
	Likelihood Ratio	22.769	4	.000
	Linear-by-Linear Association	4.921	1	.027
	N of Valid Cases	319		
Rural	Pearson Chi-Square	10.311[c]	4	.036
	Likelihood Ratio	9.886	4	.042
	Linear-by-Linear Association	.001	1	.981
	N of Valid Cases	218		
Total	Pearson Chi-Square	34.332[a]	4	.000
	Likelihood Ratio	32.157	4	.000
	Linear-by-Linear Association	3.029	1	.082
	N of Valid Cases	537		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 20.44.
b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.90.
c. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.70.

Nonparametric Correlations					
Living area				Age	Education
.	SpearMan's rho	Age	Correlation Coefficient	.	.
			Sig. (2-tailed)	.	.
			N	0	1
		Education	Correlation Coefficient	.	.
			Sig. (2-tailed)	.	.
			N	1	0
Urban	SpearMan's rho	Age	Correlation Coefficient	1.000	-.125*
			Sig. (2-tailed)	.	.021
			N	349	344
		Education	Correlation Coefficient	-.125*	1.000
			Sig. (2-tailed)	.021	.
			N	344	344
Rural	SpearMan's rho	Age	Correlation Coefficient	1.000	-.062
			Sig. (2-tailed)	.	.349
			N	235	232
		Education	Correlation Coefficient	-.062	1.000
			Sig. (2-tailed)	.349	.
			N	232	232

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

Correlations					
Living area				Age	Incomes
.	SpearMan's rho	Age	Correlation Coefficient	.	.
			Sig. (2-tailed)	.	.
			N	0	1
		Incomes	Correlation Coefficient	.	.
			Sig. (2-tailed)	.	.
			N	1	0
Urban	SpearMan's rho	Age	Correlation Coefficient	1.000	.055
			Sig. (2-tailed)	.	.352
			N	349	293
		Incomes	Correlation Coefficient	.055	1.000
			Sig. (2-tailed)	.352	.
			N	293	293
Rural	SpearMan's rho	Age	Correlation Coefficient	1.000	.162*
			Sig. (2-tailed)	.	.025
			N	235	190

	Incomes	Correlation Coefficient	.162*	1.000
		Sig. (2-tailed)	.025	.
		N	190	190

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

Correlations					
Living area				Incomes	Education
.	SpearMan's rho	Incomes	Correlation Coefficient	.	.
			Sig. (2-tailed)	.	.
			N	0	1
		Education	Correlation Coefficient	.	.
			Sig. (2-tailed)	.	.
			N	1	0
Urban	SpearMan's rho	Incomes	Correlation Coefficient	1.000	.271**
			Sig. (2-tailed)	.	.000
			N	293	289
		Education	Correlation Coefficient	.271**	1.000
			Sig. (2-tailed)	.000	.
			N	289	344
Rural	SpearMan's rho	Incomes	Correlation Coefficient	1.000	.412**
			Sig. (2-tailed)	.	.000
			N	190	188
		Education	Correlation Coefficient	.412**	1.000
			Sig. (2-tailed)	.000	.
			N	188	232

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

6. Psychographics Cronbach Alpha's

Whole sample

Innovation Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I regularly purchase different variants of a product just for a change	11.02	10.996	.508	.666
I am one of those people who try a new product firstly just after the launch	11.48	10.750	.587	.632
I find it boring to use the same product (or brand) repetitively.	11.58	11.691	.415	.705
I like to try new and different products.	10.19	12.291	.512	.669
I always have the newest gadgets.	11.89	12.467	.406	.704

Motivation to conform Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Being accepted by other people is very important to me.	6.53	2.742	.500	.188
I find it very boring when other people criticize my behaviors	6.63	3.331	.453	.299
I like to have some problems that I can solve without much thinking.	6.09	4.564	.162	.712

Loyalty Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I generally do my shopping in the same way	9.42	7.445	.261	.589
The brand of the product is important for me in my purchase decisions	10.46	5.723	.421	.472
I generally purchase the same brands.	9.88	5.682	.508	.404
The place where I do my shopping is very important to me	10.15	6.092	.305	.575

Price consciousness Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
It is important for me to pay the best price for the product	4.11	1.035	.311
I compare the prices of various products before I make a choice	4.09	.958	.311

Time pressure Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
I am always busy	3.25	1.206	.647
I usually find myself pressed for time	3.26	1.079	.647

Shopping enjoyment Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
I like shopping	3.62	1.468	.680
I take my time when i shop	3.93	1.240	.680

Urban area

Innovation Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I regularly purchase different variants of a product just for a change	11.36	10.999	.472	.676
I am one of those people who try a new product firstly just after the launch	11.84	10.481	.574	.633
I find it boring to use the same product (or brand) repetitively.	11.83	10.969	.452	.686
I like to try new and different products.	10.43	12.485	.480	.678
I always have the newest gadgets.	12.11	11.660	.439	.688

Motivation to conform Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Being accepted by other people is very important to me.	6.42	2.546	.525	.088
I find it very boring when other people criticize my behaviors	6.57	3.234	.440	.283
I like to have some problems that I can solve without much thinking.	5.97	4.555	.124	.733

Loyalty Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I generally do my shopping in the same way	9.34	6.749	.218	.534
The brand of the product is important for me in my purchase decisions	10.44	5.071	.379	.404
I generally purchase the same brands.	9.86	5.191	.455	.344
The place where I do my shopping is very important to me	10.11	5.431	.251	.533

Price consciousness Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
It is important for me to pay the best price for the product	4.19	.836	.287
I compare the prices of various products before I make a choice	4.11	.834	.287

Time pressure Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
I am always busy	3.24	1.237	.612
I usually find myself pressed for time	3.25	1.127	.612

Shopping enjoyment Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
I like shopping	3.57	1.428	.663
I take my time when i shop	3.94	1.245	.663

Rural area

Innovation Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I regularly purchase different variants of a product just for a change	10.53	10.628	.565	.642
I am one of those people who try a new product firstly just after the launch	10.95	10.726	.622	.618
I find it boring to use the same product (or brand) repetitively.	11.22	12.578	.353	.728
I like to try new and different products.	9.84	11.856	.547	.654
I always have the newest gadgets.	11.56	13.528	.347	.723

Motivation to conform Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Being accepted by other people is very important to me.	6.68	3.001	.464	.306
I find it very boring when other people criticize my behaviors	6.72	3.476	.469	.317
I like to have some problems that I can solve without much thinking.	6.26	4.544	.213	.679

Loyalty Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I generally do my shopping in the same way	9.52	8.481	.312	.651
The brand of the product is important for me in my purchase	10.49	6.703	.474	.547

decisions				
I generally purchase the same brands.	9.92	6.426	.571	.476
The place where I do my shopping is very important to me	10.20	7.083	.374	.623

Price consciousness Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
It is important for me to pay the best price for the product	3.98	1.304	.333
I compare the prices of various products before I make a choice	4.06	1.144	.333

Time pressure Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
I am always busy	3.27	1.166	.702
I usually find myself pressed for time	3.28	1.014	.702

Shopping enjoyment Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation
I like shopping	3.68	1.526	.707
I take my time when i shop	3.93	1.239	.707

7. Online shopping behavior per living area

LivingArea * Frequency_General									
			Frequency_General						Total
			Every two weeks or more often	Once a month	Once a two months	Once a three months	Once a half year	Once a year	Less than once a year	
LivingArea	Urban	Count	60	97	36	43	36	11	36	319
		% within LivingArea	18.8%	30.4%	11.3%	13.5%	11.3%	3.4%	11.3%	100.0%
	Rural	Count	40	67	26	33	19	11	22	218
		% within LivingArea	18.3%	30.7%	11.9%	15.1%	8.7%	5.0%	10.1%	100.0%
Total		Count	100	164	62	76	55	22	58	537
		% within LivingArea	18.6%	30.5%	11.5%	14.2%	10.2%	4.1%	10.8%	100.0%

Chi-Square Tests of LivingArea * Frequency_General			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.129[a]	6	.907
Likelihood Ratio	2.130	6	.907
Linear-by-Linear Association	.029	1	.864
N of Valid Cases	537		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.93.

LivingArea * FashionOnline					
			FashionOnline		Total
			Yes	No	
LivingArea	Urban	Count	248	71	319
		% within LivingArea	77.7%	22.3%	100.0%
	Rural	Count	164	54	218
		% within LivingArea	75.2%	24.8%	100.0%
Total		Count	412	125	537
		% within LivingArea	76.7%	23.3%	100.0%

Chi-Square Tests of LivingArea * FashionOnline					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.458[a]	1	.498		
Continuity Correction[b]	.328	1	.567		
Likelihood Ratio	.456	1	.499		
Fisher's Exact Test				.533	.283
Linear-by-Linear Association	.457	1	.499		
N of Valid Cases	537				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 50.74.
b. Computed only for a 2x2 table.

LivingArea * ElectronicsOnline					
			ElectronicsOnline		Total
			Yes	No	
LivingArea	Urban	Count	195	124	319
		% within LivingArea	61.1%	38.9%	100.0%
	Rural	Count	114	104	218
		% within LivingArea	52.3%	47.7%	100.0%
Total		Count	309	228	537

	% within LivingArea	57.5%	42.5%	100.0%

Chi-Square Tests of LivingArea * ElectronicsOnline					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.137[a]	1	.042		
Continuity Correction[b]	3.784	1	.052		
Likelihood Ratio	4.130	1	.042		
Fisher's Exact Test				.050	.026
Linear-by-Linear Association	4.130	1	.042		
N of Valid Cases	537				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 92.56.
b. Computed only for a 2x2 table.

LivingArea * FoodOnline				
			FoodOnline	Total
			Yes	No	
LivingArea	Urban	Count	69	250	319
		% within LivingArea	21.6%	78.4%	100.0%
	Rural	Count	34	184	218
		% within LivingArea	15.6%	84.4%	100.0%
Total		Count	103	434	537
		% within LivingArea	19.2%	80.8%	100.0%

Chi-Square Tests of LivingArea * FoodOnline					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.041[a]	1	.081		
Continuity Correction[b]	2.665	1	.103		
Likelihood Ratio	3.099	1	.078		
Fisher's Exact Test				.094	.050
Linear-by-Linear Association	3.036	1	.081		
N of Valid Cases	537				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 41.81.
b. Computed only for a 2x2 table.

LivingArea * FashionLast2years				
			FashionLast2years	Total
			Yes	No	
LivingArea	Urban	Count	232	15	247
		% within LivingArea	93.9%	6.1%	100.0%
	Rural	Count	161	4	165
		% within LivingArea	97.6%	2.4%	100.0%
Total		Count	393	19	412
		% within LivingArea	95.4%	4.6%	100.0%

Chi-Square Tests of LivingArea * FashionLast2years					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.994[a]	1	.084		
Continuity Correction[b]	2.222	1	.136		
Likelihood Ratio	3.251	1	.071		
Fisher's Exact Test				.097	.065
Linear-by-Linear Association	2.986	1	.084		
N of Valid Cases	412				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.61.
b. Computed only for a 2x2 table.

LivingArea * ElectronicsLast2years					
			ElectronicsLast2years		Total
			Yes	No	
LivingArea	Urban	Count	170	27	197
		% within LivingArea	86.3%	13.7%	100.0%
	Rural	Count	104	13	117
		% within LivingArea	88.9%	11.1%	100.0%
Total		Count	274	40	314
		% within LivingArea	87.3%	12.7%	100.0%

Chi-Square Tests of LivingArea * ElectronicsLast2years					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.444[a]	1	.505		
Continuity Correction[b]	.242	1	.623		
Likelihood Ratio	.452	1	.501		
Fisher's Exact Test				.601	.315
Linear-by-Linear Association	.443	1	.506		
N of Valid Cases	314				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.90.
b. Computed only for a 2x2 table.

LivingArea * FoodLast2years					
			FoodLast2years		Total
			Yes	No	
LivingArea	Urban	Count	61	9	70
		% within LivingArea	87.1%	12.9%	100.0%
	Rural	Count	30	4	34
		% within LivingArea	88.2%	11.8%	100.0%
Total		Count	91	13	104
		% within LivingArea	87.5%	12.5%	100.0%

Chi-Square Tests of LivingArea * FoodLast2years					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.025[a]	1	.874		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.025	1	.874		
Fisher's Exact Test				1.000	.573
Linear-by-Linear Association	.025	1	.875		
N of Valid Cases	104				

a. 1 cell (25.0%) has expected count less than 5. The minimum expected count is 4.25.
b. Computed only for a 2x2 table.

LivingArea * Frequency_Fashion									
			Frequency_Fashion						Total
			Every two weeks or more often	Once a month	Once a two months	Once a three months	Once a half year	Once a year	Less than once a year	
LivingArea	Urban	Count	12	55	34	52	56	16	8	233
		% within LivingArea	5.2%	23.6%	14.6%	22.3%	24.0%	6.9%	3.4%	100.0%
	Rural	Count	12	34	30	37	31	13	4	161
		% within LivingArea	7.5%	21.1%	18.6%	23.0%	19.3%	8.1%	2.5%	100.0%

Total		Count	24	89	64	89	87	29	12	394
		% within LivingArea	6.1%	22.6%	16.2%	22.6%	22.1%	7.4%	3.0%	100.0%

Chi-Square Tests of LivingArea * Frequency_Fashion

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.521[a]	6	.741
Likelihood Ratio	3.517	6	.742
Linear-by-Linear Association	.519	1	.471
N of Valid Cases	394		

a. 1 cell (7.1%) has expected count less than 5. The minimum expected count is 4.90.

LivingArea * Frequency_Electronics

			Frequency_Electronics							Total
			Every two weeks or more often	Once a month	Once a two months	Once a three months	Once a half year	Once a year	Less than once a year	
LivingArea	Urban	Count	3	7	12	17	38	49	45	171
		% within LivingArea	1.8%	4.1%	7.0%	9.9%	22.2%	28.7%	26.3%	100.0%
	Rural	Count	1	4	1	9	26	32	31	104
		% within LivingArea	1.0%	3.8%	1.0%	8.7%	25.0%	30.8%	29.8%	100.0%
Total		Count	4	11	13	26	64	81	76	275
		% within LivingArea	1.5%	4.0%	4.7%	9.5%	23.3%	29.5%	27.6%	100.0%

Chi-Square Tests of LivingArea * Frequency_Electronics

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.018[a]	6	.421
Likelihood Ratio	7.311	6	.293
Linear-by-Linear Association	2.197	1	.138
N of Valid Cases	275		

a. 4 cells (28.6%) have expected count less than 5. The minimum expected count is 1.51.

LivingArea * Frequency_Food

			Frequency_Food							Total
			Every two weeks or more often	Once a month	Once a two months	Once a three months	Once a half year	Once a year	Less than once a year	
LivingArea	Urban	Count	15	9	7	10	15	3	2	61
		% within LivingArea	24.6%	14.8%	11.5%	16.4%	24.6%	4.9%	3.3%	100.0%
	Rural	Count	4	8	2	9	3	4	0	30
		% within LivingArea	13.3%	26.7%	6.7%	30.0%	10.0%	13.3%	0.0%	100.0%
Total		Count	19	17	9	19	18	7	2	91
		% within LivingArea	20.9%	18.7%	9.9%	20.9%	19.8%	7.7%	2.2%	100.0%

Chi-Square Tests of LivingArea * Frequency_Food			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.001[a]	6	.125
Likelihood Ratio	10.710	6	.098
Linear-by-Linear Association	.034	1	.853
N of Valid Cases	91		

a. 5 cells (35.7%) have expected count less than 5. The minimum expected count is .66.

LivingArea * Expenditures_Fashion							
			Expenditures_Fashion				Total
			0-25 euro	26-50 euro	51-75 euro	76-100 euro	more than 100 euro	
LivingArea	Urban	Count	34	105	47	31	15	232
		% within LivingArea	14.7%	45.3%	20.3%	13.4%	6.5%	100.0%
	Rural	Count	24	53	40	31	13	161
		% within LivingArea	14.9%	32.9%	24.8%	19.3%	8.1%	100.0%
Total		Count	58	158	87	62	28	393
		% within LivingArea	14.8%	40.2%	22.1%	15.8%	7.1%	100.0%

Chi-Square Tests of LivingArea * Expenditures_Fashion			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.944[a]	4	.139
Likelihood Ratio	6.979	4	.137
Linear-by-Linear Association	3.256	1	.071
N of Valid Cases	393		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.47.

LivingArea * Expenditures_Electronics							
			Expenditures_Electronics				Total
			0-25 euro	26-50 euro	51-75 euro	76-100 euro	more than 100 euro	
LivingArea	Urban	Count	8	11	32	26	92	169
		% within LivingArea	4.7%	6.5%	18.9%	15.4%	54.4%	100.0%
	Rural	Count	6	14	7	19	58	104
		% within LivingArea	5.8%	13.5%	6.7%	18.3%	55.8%	100.0%
Total		Count	14	25	39	45	150	273
		% within LivingArea	5.1%	9.2%	14.3%	16.5%	54.9%	100.0%

Chi-Square Tests of LivingArea * Expenditures_Electronics			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.591[a]	4	.032
Likelihood Ratio	11.247	4	.024
Linear-by-Linear Association	.051	1	.821
N of Valid Cases	273		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.33.

LivingArea * Expenditures_Food							
			Expenditures_Food				Total
			0-25 euro	26-50 euro	51-75 euro	76-100 euro	more than 100 euro	
LivingArea	Urban	Count	5	20	12	12	12	61
		% within LivingArea	8.2%	32.8%	19.7%	19.7%	19.7%	100.0%
	Rural	Count	3	8	9	4	6	30
		% within LivingArea	10.0%	26.7%	30.0%	13.3%	20.0%	100.0%
Total		Count	8	28	21	16	18	91
		% within LivingArea	8.8%	30.8%	23.1%	17.6%	19.8%	100.0%

Chi-Square Tests of LivingArea * Expenditures_Food			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.709[a]	4	.789
Likelihood Ratio	1.698	4	.791
Linear-by-Linear Association	.012	1	.912
N of Valid Cases	91		

a. 1 cell (10.0%) has expected count less than 5. The minimum expected count is 2.64.

LivingArea * Percentage_Fashion							
			Percentage_Fashion				Total
			0-25 percent	26-50 percent	51-75 percent	76-100 percent	
LivingArea	Urban	Count	108	72	38	14	232
		% within LivingArea	46.6%	31.0%	16.4%	6.0%	100.0%
	Rural	Count	77	54	22	8	161
		% within LivingArea	47.8%	33.5%	13.7%	5.0%	100.0%
Total		Count	185	126	60	22	393
		% within LivingArea	47.1%	32.1%	15.3%	5.6%	100.0%

Chi-Square Tests of LivingArea * Percentage_Fashion			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.870[a]	3	.833
Likelihood Ratio	.878	3	.831
Linear-by-Linear Association	.441	1	.507
N of Valid Cases	393		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.01.

LivingArea * Percentage_Electronics							
			Percentage_Electronics				Total
			0-25 percent	26-50 percent	51-75 percent	76-100 percent	
LivingArea	Urban	Count	78	26	39	26	169
		% within LivingArea	46.2%	15.4%	23.1%	15.4%	100.0%
	Rural	Count	57	23	12	12	104
		% within LivingArea	54.8%	22.1%	11.5%	11.5%	100.0%
Total		Count	135	49	51	38	273
		% within LivingArea	49.5%	17.9%	18.7%	13.9%	100.0%

Chi-Square Tests of LivingArea * Percentage_Electronics			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.872[a]	3	.049
Likelihood Ratio	8.170	3	.043
Linear-by-Linear Association	4.031	1	.045
N of Valid Cases	273		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.48.

LivingArea * Percentage_Food							
			Percentage_Food				Total
			0-25 percent	26-50 percent	51-75 percent	76-100 percent	
LivingArea	Urban	Count	32	16	8	5	61
		% within LivingArea	52.5%	26.2%	13.1%	8.2%	100.0%
	Rural	Count	15	7	6	2	30
		% within LivingArea	50.0%	23.3%	20.0%	6.7%	100.0%
Total		Count	47	23	14	7	91
		% within LivingArea	51.6%	25.3%	15.4%	7.7%	100.0%

Chi-Square Tests of LivingArea * Percentage_Food			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.771[a]	3	.856
Likelihood Ratio	.748	3	.862
Linear-by-Linear Association	.084	1	.772
N of Valid Cases	91		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 2.31.

LivingArea * WeeklyGroceries					
			WeeklyGroceries		Total
			False	True	
LivingArea	Urban	Count	292	27	319
		% within LivingArea	91.5%	8.5%	100.0%
	Rural	Count	202	16	218
		% within LivingArea	92.7%	7.3%	100.0%
Total		Count	494	43	537
		% within LivingArea	92.0%	8.0%	100.0%

Chi-Square Tests of LivingArea * WeeklyGroceries					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.222[a]	1	.637		
Continuity Correction[b]	.096	1	.757		
Likelihood Ratio	.224	1	.636		
Fisher's Exact Test				.747	.382
Linear-by-Linear Association	.222	1	.638		
N of Valid Cases	537				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 17.46.
b. Computed only for a 2x2 table

LivingArea * SpecialOccasions					
			SpecialOccasions		Total
			False	True	
LivingArea	Urban	Count	283	36	319
		% within LivingArea	88.7%	11.3%	100.0%
	Rural	Count	204	14	218
		% within LivingArea	93.6%	6.4%	100.0%
Total		Count	487	50	537
		% within LivingArea	90.7%	9.3%	100.0%

Chi-Square Tests of LivingArea * SpecialOccasions					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.627[a]	1	.057		
Continuity Correction[b]	3.074	1	.080		
Likelihood Ratio	3.781	1	.052		
Fisher's Exact Test				.069	.038
Linear-by-Linear Association	3.620	1	.057		
N of Valid Cases	537				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 20.30.
b. Computed only for a 2x2 table

8. T-test Psychographics vs Living area

T-Test Psychographics vs Living area - Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Innovation	Equal variances assumed	.429	.513	2.404	535	.017	.17349	.07216	.03174	.31524
	Equal variances not assumed			2.394	458.932	.017	.17349	.07248	.03105	.31593
Loyalty	Equal variances assumed	3.980	.047	-.777	535	.438	-.07014	.09032	-.24757	.10730
	Equal variances not assumed			-.764	439.009	.445	-.07014	.09181	-.25058	.11031
Motivation to conform	Equal variances assumed	.082	.775	-1.579	535	.115	-.14798	.09373	-.33210	.03615
	Equal variances not assumed			-1.579	466.698	.115	-.14798	.09371	-.33212	.03617
Price Consciousness	Equal variances assumed	8.859	.003	1.887	535	.060	.13369	.07085	-.00549	.27287
	Equal variances not assumed			1.815	400.982	.070	.13369	.07365	-.01110	.27848
TimePressure	Equal variances assumed	.001	.970	-.360	535	.719	-.03072	.08528	-.19825	.13682
	Equal variances not assumed			-.361	470.600	.718	-.03072	.08506	-.19786	.13643
ShoppingEnjoyment	Equal variances assumed	.018	.894	-.512	535	.609	-.04799	.09371	-.23207	.13609
	Equal variances not assumed			-.509	457.180	.611	-.04799	.09423	-.23317	.13719
	Urban Innovative Shoppers	Urban Traditional Shoppers				-.47116*	.19671	.017	-.7957	-.1466
		Urban Flex Shoppers				-.53013*	.21315	.013	-.8818	-.1785

*. The mean difference is significant at the 0.10 level.

ANOVA* Living area					
		Sum of Squares	df	Mean Square	F	Sig.
Innovation	Between Groups	3.898	1	3.898	5.781	.017
	Within Groups	360.743	535	.674		
	Total	364.641	536			
Loyalty	Between Groups	.127	1	.127	.209	.648
	Within Groups	326.318	535	.610		
	Total	326.446	536			
PriceAwareness	Between Groups	2.315	1	2.315	3.560	.060
	Within Groups	347.803	535	.650		
	Total	350.117	536			
MotivationToConform	Between Groups	1.801	1	1.801	2.497	.115
	Within Groups	385.810	535	.721		
	Total	387.611	536			
TimePressure	Between Groups	.122	1	.122	.130	.719
	Within Groups	503.914	535	.942		
	Total	504.036	536			
ShoppingEnjoyment	Between Groups	.298	1	.298	.262	.609
	Within Groups	608.386	535	1.137		
	Total	608.684	536			

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.723	.726	5

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	2.809	2.153	3.849	1.696	1.788	.435	5

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I regularly purchase different variants of a product just for a change	11.02	10.996	.508	.290	.666
I am one of those people who try a new product firstly just after the launch	11.48	10.750	.587	.391	.632
I find it boring to use the same product (or brand) repetitively.	11.58	11.691	.415	.183	.705
I like to try new and different products.	10.19	12.291	.512	.304	.669
I always have the newest gadgets.	11.89	12.467	.406	.227	.704

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.474	.474	2

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.098	4.089	4.106	.017	1.004	.000	2

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
It is important for me to pay the best price for the product.	4.11	1.035	.311	.097	.
I compare the prices of various products before I make a choice.	4.09	.958	.311	.097	.

9. ANOVA 3 Urban Segments vs psychographics

ANOVA of Oneway 3 segments urban weekly groceries						
		Sum of Squares	df	Mean Square	F	Sig.
Innovation	Between Groups	6.200	2	3.100	4.801	.009
	Within Groups	204.049	316	.646		
	Total	210.249	318			
Loyalty	Between Groups	1.396	2	.698	.710	.492
	Within Groups	310.543	316	.983		
	Total	311.939	318			
Motivation to conform	Between Groups	.806	2	.403	.352	.703
	Within Groups	361.349	316	1.144		
	Total	362.155	318			
Price Consciousness	Between Groups	.425	2	.212	.394	.675
	Within Groups	170.452	316	.539		
	Total	170.876	318			
TimePressure	Between Groups	5.043	2	2.521	2.675	.070
	Within Groups	297.885	316	.943		
	Total	302.928	318			
ShoppingEnjoyment	Between Groups	7.303	2	3.651	3.338	.037
	Within Groups	345.619	316	1.094		
	Total	352.922	318			

Post Hoc Tests 3 segments urban weekly groceries							
LSD							
Dependent Variable	(I) urb_weeklygroceries_3seg	(J) urb_weeklygroceries_3seg	Mean Difference (I-J)	Std. Error	Sig.	90% Confidence Interval	
						Lower Bound	Upper Bound
Innovation	Urban Traditional Shoppers	Urban Flex Shoppers	-.29563*	.10263	.004	-.4649	-.1263
		Urban Innovative Shoppers	-.26076*	.15115	.085	-.5101	-.0114
	Urban Flex Shoppers	Urban Traditional Shoppers	.29563*	.10263	.004	.1263	.4649
		Urban Innovative Shoppers	.03487	.16378	.832	-.2353	.3050
	Urban Innovative Shoppers	Urban Traditional Shoppers	.26076*	.15115	.085	.0114	.5101
		Urban Flex Shoppers	-.03487	.16378	.832	-.3050	.2353
Loyalty	Urban Traditional Shoppers	Urban Flex Shoppers	-.14441	.12661	.255	-.3533	.0645
		Urban Innovative Shoppers	.01800	.18646	.923	-.2896	.3256
	Urban Flex Shoppers	Urban Traditional Shoppers	.14441	.12661	.255	-.0645	.3533
		Urban Innovative Shoppers	.16241	.20204	.422	-.1709	.4957
	Urban Innovative Shoppers	Urban Traditional Shoppers	-.01800	.18646	.923	-.3256	.2896
		Urban Flex Shoppers	-.16241	.20204	.422	-.4957	.1709
Motivation to conform	Urban Traditional Shoppers	Urban Flex Shoppers	-.09171	.13658	.502	-.3170	.1336
		Urban Innovative Shoppers	.07053	.20114	.726	-.2613	.4023
	Urban Flex Shoppers	Urban Traditional Shoppers	.09171	.13658	.502	-.1336	.3170
		Urban Innovative Shoppers	.16224	.21795	.457	-.1973	.5218
	Urban Innovative Shoppers	Urban Traditional Shoppers	-.07053	.20114	.726	-.4023	.2613
		Urban Flex Shoppers	-.16224	.21795	.457	-.5218	.1973

Price Consciousness	Urban Traditional Shoppers	Urban Flex Shoppers	.01546	.09380	.869	-.1393	.1702
		Urban Innovative Shoppers	-.11291	.13814	.414	-.3408	.1150
	Urban Flex Shoppers	Urban Traditional Shoppers	-.01546	.09380	.869	-.1702	.1393
		Urban Innovative Shoppers	-.12836	.14969	.392	-.3753	.1186
	Urban Innovative Shoppers	Urban Traditional Shoppers	.11291	.13814	.414	-.1150	.3408
		Urban Flex Shoppers	.12836	.14969	.392	-.1186	.3753
TimePressure	Urban Traditional Shoppers	Urban Flex Shoppers	-.18226	.12400	.143	-.3868	.0223
		Urban Innovative Shoppers	-.37548*	.18262	.041	-.6768	-.0742
	Urban Flex Shoppers	Urban Traditional Shoppers	.18226	.12400	.143	-.0223	.3868
		Urban Innovative Shoppers	-.19322	.19788	.330	-.5197	.1332
	Urban Innovative Shoppers	Urban Traditional Shoppers	.37548*	.18262	.041	.0742	.6768
		Urban Flex Shoppers	.19322	.19788	.330	-.1332	.5197
ShoppingEnjoyment	Urban Traditional Shoppers	Urban Flex Shoppers	-.05897	.13357	.659	-.2793	.1614
		Urban Innovative Shoppers	.47116*	.19671	.017	.1466	.7957
	Urban Flex Shoppers	Urban Traditional Shoppers	.05897	.13357	.659	-.1614	.2793
		Urban Innovative Shoppers	.53013*	.21315	.013	.1785	.8818

10. T-test 2 Rural Segments vs psychographics

T-test psychographics vs rural weekly groceries 2 segments - Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Innovation	Equal variances assumed	.026	.873	-.923	216	.357	-.11845	.12840	-.37152	.13462
	Equal variances not assumed			-.922	98.336	.359	-.11845	.12841	-.37327	.13637
Loyalty	Equal variances assumed	1.472	.226	.115	216	.909	.01912	.16690	-.30984	.34808
	Equal variances not assumed			.123	113.359	.902	.01912	.15533	-.28859	.32684
Motivation to conform	Equal variances assumed	.597	.441	-1.677	216	.095	-.27433	.16360	-.59678	.04812
	Equal variances not assumed			-1.780	110.441	.078	-.27433	.15416	-.57982	.03117
Price Consciousness	Equal variances assumed	.133	.716	.263	216	.793	.03672	.13947	-.23817	.31162
	Equal variances not assumed			.265	99.800	.791	.03672	.13837	-.23781	.31126
TimePressure	Equal variances assumed	2.279	.133	-1.985	216	.048	-.29247	.14734	-.58287	-.00207
	Equal variances not assumed			-2.221	123.944	.028	-.29247	.13167	-.55308	-.03186
ShoppingEnjoyment	Equal variances assumed	1.384	.241	.622	216	.534	.10423	.16747	-.22585	.43431
	Equal variances not assumed			.668	113.221	.505	.10423	.15594	-.20472	.41317

11. Segments vs demographics & online shopping behavior

Rural_weekly groceries_2seg * Age Crosstabulation						
			Age			Total
			Younger than 25	25-50	50+	
Rural_weekly groceries_2seg	Rural Traditional Shoppers	Count	19	101	41	161
		% within Rural_weekly groceries_2seg	11.8%	62.7%	25.5%	100.0%
	Rural Modern Shoppers	Count	11	40	6	57
		% within Rural_weekly groceries_2seg	19.3%	70.2%	10.5%	100.0%
Total		Count	30	141	47	218
		% within Rural_weekly groceries_2seg	13.8%	64.7%	21.6%	100.0%

Chi-Square Tests of Rural_weekly groceries_2seg * Age Crosstabulation			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.438[a]	2	.040
Likelihood Ratio	7.005	2	.030
Linear-by-Linear Association	6.077	1	.014
N of Valid Cases	218		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.84.

Rural_weekly groceries_2seg * FoodOnline				
			FoodOnline	Total
			Yes	No	
Rural_weekly groceries_2seg	Rural Traditional Shoppers	Count	19	142	161
		% within Rural_weekly groceries_2seg	11.8%	88.2%	100.0%
	Rural Modern Shoppers	Count	15	42	57
		% within Rural_weekly groceries_2seg	26.3%	73.7%	100.0%
Total		Count	34	184	218
		% within Rural_weekly groceries_2seg	15.6%	84.4%	100.0%

Chi-Square Tests of Rural_weekly groceries_2seg * FoodOnline					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.737[a]	1	.009		
Continuity Correction[b]	5.680	1	.017		
Likelihood Ratio	6.180	1	.013		
Fisher's Exact Test				.018	.011
Linear-by-Linear Association	6.706	1	.010		
N of Valid Cases	218				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.89.
b. Computed only for a 2x2 table

Rural_weekly groceries_2seg * WeeklyGroceries					
			WeeklyGroceries		Total
			False	True	
Rural_weekly groceries_2seg	Rural Traditional Shoppers	Count	157	4	161
		% within Rural_weekly groceries_2seg	97.5%	2.5%	100.0%
	Rural Modern Shoppers	Count	45	12	57
		% within Rural_weekly groceries_2seg	78.9%	21.1%	100.0%

Total	Count		202	16	218
	% within groceries_2seg	Rural_weekly	92.7%	7.3%	100.0%

Chi-Square Tests of Rural_weekly groceries_2seg * WeeklyGroceries					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	21.341[a]	1	.000		
Continuity Correction[b]	18.698	1	.000		
Likelihood Ratio	18.246	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	21.244	1	.000		
N of Valid Cases	218				

a. 1 cell (25.0%) has expected count less than 5. The minimum expected count is 4.18.
b. Computed only for a 2x2 table

Rural_weekly groceries_2seg * Frequency_Fashion									
			Frequency_Fashion							Total
			Every two weeks or more often	Once a month	Once a two months	Once a three months	Once a half year	Once a year	Less than once a year	
Rural_weekly groceries_2seg	Rural Traditional Shoppers	Count	10	20	25	21	25	12	4	117
		% within Rural_weekly groceries_2seg	8.5%	17.1%	21.4%	17.9%	21.4%	10.3%	3.4%	100.0%
	Rural Modern Shoppers	Count	2	14	5	16	6	1	0	44
		% within Rural_weekly groceries_2seg	4.5%	31.8%	11.4%	36.4%	13.6%	2.3%	0.0%	100.0%
Total		Count	12	34	30	37	31	13	4	161
		% within Rural_weekly groceries_2seg	7.5%	21.1%	18.6%	23.0%	19.3%	8.1%	2.5%	100.0%

Chi-Square Tests of Rural_weekly groceries_2seg * Frequency_Fashion			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.426[a]	6	.017
Likelihood Ratio	16.810	6	.010
Linear-by-Linear Association	2.390	1	.122
N of Valid Cases	161		

a. 4 cells (28.6%) have expected count less than 5. The minimum expected count is 1.09.

urb_weekly groceries_3seg * Gender					
			Gender		Total
			Male	Female	
urb_weekly groceries_3seg	segment 1	Count	29	168	197
		% within urb_weekly groceries_3seg	14.7%	85.3%	100.0%
	Rural Modern Shoppers	Count	16	73	89
		% within urb_weekly groceries_3seg	18.0%	82.0%	100.0%
	segment 3	Count	10	23	33

	% within groceries_3seg	urb_weekly	30.3%	69.7%	100.0%
Total	Count		55	264	319
	% within groceries_3seg	urb_weekly	17.2%	82.8%	100.0%

Chi-Square Tests of urb_weekly groceries_3seg * Gender			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.857[a]	2	.088
Likelihood Ratio	4.325	2	.115
Linear-by-Linear Association	4.126	1	.042
N of Valid Cases	319		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.69.

urb_weekly groceries_3seg * Frequency_General										
			Frequency_General							Total
			Elke twee weken of vaker	Een keer per maand	Een keer per twee maanden	Een keer per drie maanden	Een keer per half jaar	Een keer per jaar	Minder dan een keer per jaar	
urb_weekly groceries_3seg	segment 1	Count	22	51	28	35	25	6	30	197
		% within urb_weekly groceries_3seg	11.2%	25.9%	14.2%	17.8%	12.7%	3.0%	15.2%	100.0%
	Rural Modern Shoppers	Count	25	35	6	4	10	4	5	89
		% within urb_weekly groceries_3seg	28.1%	39.3%	6.7%	4.5%	11.2%	4.5%	5.6%	100.0%
	segment 3	Count	13	11	2	4	1	1	1	33
		% within urb_weekly groceries_3seg	39.4%	33.3%	6.1%	12.1%	3.0%	3.0%	3.0%	100.0%
Total		Count	60	97	36	43	36	11	36	319
		% within urb_weekly groceries_3seg	18.8%	30.4%	11.3%	13.5%	11.3%	3.4%	11.3%	100.0%

Chi-Square Tests of urb_weekly groceries_3seg * Frequency_General			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	43.324[a]	12	.000
Likelihood Ratio	45.789	12	.000
Linear-by-Linear Association	23.778	1	.000
N of Valid Cases	319		

a. 6 cells (28.6%) have expected count less than 5. The minimum expected count is 1.14.

urb_weekly groceries_3seg * Frequency_Electronics									
			Frequency_Electronics						Total
			Every two weeks or more often	Once a month	Once a two months	Once a three months	Once a half year	Once a year	Less than once a year	
urb_weekly groceries_3seg	segment 1	Count	2	3	2	5	22	33	33	100
		% within urb_weekly groceries_3seg	2.0%	3.0%	2.0%	5.0%	22.0%	33.0%	33.0%	100.0%
	Rural Modern	Count	1	3	7	11	12	12	10	56
		% within	1.8%	5.4%	12.5%	19.6%	21.4%	21.4%	17.9%	100.0%

	Shoppers	urb_weekly groceries_3seg								
	segment 3	Count	0	1	3	1	4	4	2	15
		% within urb_weekly groceries_3seg	0.0%	6.7%	20.0%	6.7%	26.7%	26.7%	13.3%	100.0%
Total		Count	3	7	12	17	38	49	45	171
		% within urb_weekly groceries_3seg	1.8%	4.1%	7.0%	9.9%	22.2%	28.7%	26.3%	100.0%

Chi-Square Tests of urb_weekly groceries_3seg * Frequency_Electronics			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.592[a]	12	.017
Likelihood Ratio	24.314	12	.018
Linear-by-Linear Association	11.199	1	.001
N of Valid Cases	171		

a. 12 cells (57.1%) have expected count less than 5. The minimum expected count is .26.

urb_weekly groceries_3seg * FashionOnline					
			FashionOnline		Total
			Yes	No	
urb_weekly groceries_3seg	segment 1	Count	144	53	197
		% within urb_weekly groceries_3seg	73.1%	26.9%	100.0%
	Rural Modern Shoppers	Count	74	15	89
		% within urb_weekly groceries_3seg	83.1%	16.9%	100.0%
	segment 3	Count	30	3	33
		% within urb_weekly groceries_3seg	90.9%	9.1%	100.0%
Total		Count	248	71	319
		% within urb_weekly groceries_3seg	77.7%	22.3%	100.0%

Chi-Square Tests of urb_weekly groceries_3seg * FashionOnline			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.266[a]	2	.026
Likelihood Ratio	7.966	2	.019
Linear-by-Linear Association	7.205	1	.007
N of Valid Cases	319		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.34.

urb_weekly groceries_3seg * Percentage_Fashion							
			Percentage_Fashion				Total
			0-25 percent	26-50 percent	51-75 percent	76-100 percent	
urb_weekly groceries_3seg	segment 1	Count	72	35	17	10	134
		% within urb_weekly groceries_3seg	53.7%	26.1%	12.7%	7.5%	100.0%
	Rural Modern Shoppers	Count	25	25	16	2	68
		% within urb_weekly groceries_3seg	36.8%	36.8%	23.5%	2.9%	100.0%
	segment 3	Count	11	12	5	2	30
		% within urb_weekly groceries_3seg	36.7%	40.0%	16.7%	6.7%	100.0%

Total	Count	108	72	38	14	232
	% within urb_weekly groceries_3seg	46.6%	31.0%	16.4%	6.0%	100.0%

Chi-Square Tests of urb_weekly groceries_3seg * Percentage_Fashion			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.843[a]	6	.093
Likelihood Ratio	10.946	6	.090
Linear-by-Linear Association	2.033	1	.154
N of Valid Cases	232		

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 1.81.

urb_weekly groceries_3seg * ElectronicsOnline					
			ElectronicsOnline		Total
			Yes	No	
urb_weekly groceries_3seg	segment 1	Count	112	85	197
		% within urb_weekly groceries_3seg	56.9%	43.1%	100.0%
	Rural Modern Shoppers	Count	62	27	89
		% within urb_weekly groceries_3seg	69.7%	30.3%	100.0%
	segment 3	Count	21	12	33
		% within urb_weekly groceries_3seg	63.6%	36.4%	100.0%
Total		Count	195	124	319
		% within urb_weekly groceries_3seg	61.1%	38.9%	100.0%

Chi-Square Tests of urb_weekly groceries_3seg * ElectronicsOnline			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.331[a]	2	.115
Likelihood Ratio	4.405	2	.111
Linear-by-Linear Association	2.464	1	.116
N of Valid Cases	319		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.83.

urb_weekly groceries_3seg * FoodOnline					
			FoodOnline		Total
			Yes	No	
urb_weekly groceries_3seg	segment 1	Count	23	174	197
		% within urb_weekly groceries_3seg	11.7%	88.3%	100.0%
	Rural Modern Shoppers	Count	27	62	89
		% within urb_weekly groceries_3seg	30.3%	69.7%	100.0%
	segment 3	Count	19	14	33
		% within urb_weekly groceries_3seg	57.6%	42.4%	100.0%
Total		Count	69	250	319
		% within urb_weekly groceries_3seg	21.6%	78.4%	100.0%

Chi-Square Tests of urb_weekly groceries_3seg * FoodOnline			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40.651[a]	2	.000
Likelihood Ratio	36.932	2	.000
Linear-by-Linear Association	39.985	1	.000
N of Valid Cases	319		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.14.

urb_weekly groceries_3seg * WeeklyGroceries				
			WeeklyGroceries	Total
			False	True	
urb_weekly groceries_3seg	segment 1	Count	188	9	197
		% within urb_weekly groceries_3seg	95.4%	4.6%	100.0%
	Rural Modern Shoppers	Count	81	8	89
		% within urb_weekly groceries_3seg	91.0%	9.0%	100.0%
	segment 3	Count	23	10	33
		% within urb_weekly groceries_3seg	69.7%	30.3%	100.0%
Total		Count	292	27	319
		% within urb_weekly groceries_3seg	91.5%	8.5%	100.0%

Chi-Square Tests of urb_weekly groceries_3seg * WeeklyGroceries			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.205[a]	2	.000
Likelihood Ratio	17.572	2	.000
Linear-by-Linear Association	19.557	1	.000
N of Valid Cases	319		

a. 1 cell (16.7%) has expected count less than 5. The minimum expected count is 2.79.

urb_weekly groceries_3seg * SpecialOccasions				
			SpecialOccasions	Total
			False	True	
urb_weekly groceries_3seg	segment 1	Count	182	15	197
		% within urb_weekly groceries_3seg	92.4%	7.6%	100.0%
	Rural Modern Shoppers	Count	77	12	89
		% within urb_weekly groceries_3seg	86.5%	13.5%	100.0%
	segment 3	Count	24	9	33
		% within urb_weekly groceries_3seg	72.7%	27.3%	100.0%
Total		Count	283	36	319
		% within urb_weekly groceries_3seg	88.7%	11.3%	100.0%

Chi-Square Tests of urb_weekly groceries_3seg * SpecialOccasions			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.506[a]	2	.003
Likelihood Ratio	9.707	2	.008
Linear-by-Linear Association	10.692	1	.001
N of Valid Cases	319		

a. 1 cell (16.7%) has expected count less than 5. The minimum expected count is 3.72.

12. Mixed logit Urban Weekly Groceries

1st try

	Attribute	Level	β	P	St. dev	p
Home delivery	**Home delivery Constant**		-3.64024	0.0000	3.39054	0.0000
	Fastest delivery	Same day	-0.08485	0.6822	1.02607	0.0000
		Tomorrow	0.08485			
	Delivery times	Monday untill Saturday (8.00-22.00)	0.11324	0.5329	0.27207	0.5678
		7 days a week (8.00-22.00)	-0.11324			
	Delivery costs	Free	0.92732	0.0000	0.8062	0.0068
		€ 2.50	0.30986	0.0632	0.80102	0.0031
		€ 5.00	-0.28908	0.0821	0.32993	0.1843
		€ 7.50	-0.9481			
	Delivery timeslots	Whole day	0.11342	0.4714	0.3917	0.0787
		Half day (before or after 15.00)	0.08992	0.5618	0.16783	0.6911
		Timeslot of 4 hours	-0.06905	0.6789	0.50052	0.0797
		Timeslot of 2 hours	-0.13429			
Pick-up points	**Pick-up point Constant**		-4.48719	0.0000	2.95234	0.0000
	Fastest Pick-up	Same day	0.15523	0.4784	0.61541	0.0567
		Tomorrow	-0.15523			
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.12397	0.5352	0.83878	0.0412
		7 days a week (8.00-22.00) with adjacent supermarket	0.64153	0.0012	0.54907	0.0351
		24 hours a day on weekdays and in the weekends (8.00-22.00). automated and without adjacent supermarket	-0.42932	0.0699	1.19071	0.0001
		24/7 opened. automated and without adjacent supermarket	-0.33618			
	Costs for pick-up	Free	0.60831	0.0019	0.95254	0.0028
		€ 2.50	0.16434	0.4027	0.54691	0.0230
		€ 5.00	-0.25158	0.2450	1.04195	0.0002
		€ 7.50	-0.52107			
	Traveltime	Less than 5 minutes from home	-0.15756	0.4539	0.18712	0.6839
		5-10 minutes from home	0.15756			

2nd try

	Attribute	Level	B	P	St. dev	p
Home delivery	**Home delivery Constant**		-3.46080	0.0000	3.18912	0.0000
	Fastest delivery	Same day	-0.13945	0.5249	1.09782	0.0003
		Tomorrow	0.13945			
	Delivery costs	Free	0.79330	0.0000	0.65967	0.0197
		€ 2.50	0.28418	0.0772	0.61808	0.0336
		€ 5.00	-0.26539	0.0907	0.14823	0.6672
		€ 7.50	-0.81209			
Pick-up points	**Pick-up point Constant**		-4.14257	0.0000	2.82369	0.0000
	Fastest Pick-up	Same day	0.07176	0.7724	0.84098	0.1999
		Tomorrow	-0.07176			
	Opening time Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.22111	0.2561	0.51158	0.1541
		7 days a week (8.00-22.00) with adjacent supermarket	0.50209	0.0127	0.79894	0.0106

		24 hours a day on weekdays and in the weekends (8.00-22.00). automated and without adjacent supermarket	-0.31584	0.1409	1.06625	0.0009
		24/7 opened. automated and without adjacent supermarket	-0.40736			
	Costs for pick-up	Free	0.53832	0.0078	0.96612	0.0067
		€ 2.50	0.04994	0.8015	0.70627	0.0379
		€ 5.00	-0.03572	0.8551	0.87265	0.0186
		€ 7.50	-0.55254			
Non random	Delivery times	Monday untill Saturday (8.00-22.00)	0.11086	0.5171		
		7 days a week (8.00-22.00)	-0.11086			
	Delivery timeslots	Whole day	0.09739	0.5010		
		Half day (before or after 15.00)	0.07979	0.5923		
		Timeslot of 4 hours	-0.00164	0.9911		
		Timeslot of 2 hours	-0.17554			
	Traveltime	Less than 5 minutes from home	-0.06381	0.7525		
		5-10 minutes from home	0.06381			

13. Mixed logit Urban Dinner Party

1st try

	Attribute	Level	β	P	St. dev	p
Home delivery	**Home delivery Constant**		-6.79648	0.0000	7.6032	0.0000
	Fastest delivery	Same day	-1.52869	0.0000	0.02284	0.9511
		Tomorrow	1.52869			
	Delivery times	Monday untill Saturday (8.00-22.00)	-1.1165	0.0080	1.97656	0.0005
		7 days a week (8.00-22.00)	1.1165			
	Delivery costs	Free	3.63898	0.0000	1.86124	0.0000
		€ 2.50	1.55034	0.0000	1.2989	0.0063
		€ 5.00	-1.08106	0.0002	1.10168	0.0027
		€ 7.50	-4.10826			
	Delivery timeslots	Whole day	-0.60962	0.0460	1.70005	0.0000
		Half day (before or after 15.00)	-0.15309	0.5860	1.31414	0.0026
		Timeslot of 4 hours	-0.01151	0.9635	0.47588	0.2148
		Timeslot of 2 hours	0.77422			
Pick-up points	**Pick-up point Constant**		-7.89879	0.0000	5.83826	0.0000
	Fastest Pick-up	Same day	-0.14845	0.6834	1.50318	0.0001
		Tomorrow	0.14845			
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.18409	0.4897	0.22034	0.4494
		7 days a week (8.00-22.00) with adjacent supermarket	-0.24665	0.3441	0.21192	0.5230
		24 hours a day on weekdays and in the weekends (8.00-22.00). automated and without adjacent supermarket	-0.19296	0.5034	0.10635	0.8068
		24/7 opened. automated and without adjacent supermarket	0.25552			
	Costs for pick-up	Free	2.85436	0.0000	2.14928	0.0000
		€ 2.50	1.26998	0.0001	0.90392	0.0436
		€ 5.00	-0.46494	0.1705	0.87177	0.0158
		€ 7.50	-3.6594			
	Traveltime	Less than 5 minutes from home	-0.07609	0.8314	1.68183	0.0007
		5-10 minutes from home	0.07609			

2nd try

	Attribute	Level	β	P	St. dev	p
Home delivery	**Home delivery Constant**		-6.61822	0.0000	7.3463	0.0000
	Delivery times	Monday untill Saturday (8.00-22.00)	-0.64642	0.0418	1.6112	0.0000
		7 days a week (8.00-22.00)	0.64642			
	Delivery costs	Free	3.41363	0.0000	2.38135	0.0000
		€ 2.50	-3.41363	0.0000	-2.38135	0.0000
		€ 5.00	1.38958	0.0001	0.73052	0.0535
		€ 7.50	-1.05087			
	Delivery timeslots	Whole day	-0.44158	0.1233	1.66182	0.0000
		Half day (before or after 15.00)	0.10287			
		Timeslot of 4 hours	-0.32522	0.2180	1.18270	0.0024
		Timeslot of 2 hours	-0.1958	0.4215	0.52627	0.3083
Pick-ip	**Pick-up point Constant**		-0.62366	0.0786	1.11758	0.0045
	Fastest Pick-up	Same day	1.14468			
		Tomorrow	-6.91826	0.0000	5.02587	0.0000
	Costs for pick-up	Free	2.69904	0.0000	2.04253	0.0000
		€ 2.50	-2.69904	0.0000	0.56861	0.3284

		€ 5.00	1.24743	0.2333	0.16259	0.7373
		€ 7.50	-0.37449			
	Traveltime	Less than 5 minutes from home	0.43032	0.1493	0.53133	0.1662
		5-10 minutes from home	-1.30326			
Non random	Fastest delivery	Same day	-1.66249	0.0000		
		Tomorrow	0.00934	0.9699		
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	-0.0070	0.9768		
		7 days a week (8.00-22.00) with adjacent supermarket	1.66015	-1.9467		
		24 hours a day on weekdays and in the weekends (8.00-22.00). automated and without adjacent supermarket	0.04201	0.8742		
		24/7 opened. automated and without adjacent supermarket	-0.04201	-0.8742		

14. Mixed logit Rural Weekly groceries

1st try

	Attribute	Level	β	P	St. dev	p
Home delivery	**Home delivery Constant**		-4.92311	0.0000	4.476	0.0000
	Fastest delivery	Same day	-0.53072	0.0503	0.3406	0.4607
		Tomorrow	0.53072			
	Delivery times	Monday untill Saturday (8.00-22.00)	-0.13551	0.6219	0.0028	0.9951
		7 days a week (8.00-22.00)	0.13551			
	Delivery costs	Free	1.66367	0.0000	1.90017	0.0000
		€ 2.50	0.7975	0.0019	0.43501	0.3860
		€ 5.00	-0.5017	0.0571	0.33129	0.4512
		€ 7.50	-1.95947			
	Delivery timeslots	Whole day	-0.45265	0.0967	1.06001	0.0012
		Half day (before or after 15.00)	0.08174	0.7421	0.8895	0.0074
		Timeslot of 4 hours	-0.02387	0.9208	0.70739	0.0647
		Timeslot of 2 hours	0.39478			
Pick-up points	**Pick-up point Constant**		-7.439	0.0000	3.99349	0.0000
	Fastest Pick-up	Same day	-0.53556	0.1649	0.09566	0.8272
		Tomorrow	0.53556			
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	0.50784	0.1203	0.23832	0.4965
		7 days a week (8.00-22.00) with adjacent supermarket	0.45361	0.2169	1.23876	0.0056
		24 hours a day on weekdays and in the weekends (8.00-22.00). automated and without adjacent supermarket	-0.32011	0.3774	1.29951	0.0175
		24/7 opened. automated and without adjacent supermarket	-0.64134			
	Costs for pick-up	Free	1.6494	0.0002	2.49403	0.0000
		€ 2.50	1.29922	0.0032	0.99122	0.0602
		€ 5.00	0.6794	0.0660	0.86677	0.1457
		€ 7.50	-3.62802			
	Traveltime	0-10 minutes from home	1.27243	0.0030	2.44795	0.0000
		11-20 minutes from home	1.18381	0.0011	0.01697	0.9721
		21-30 minutes from home	-0.91663	0.0686	0.86701	0.1720
		31-40 minutes from home	-1.53961			

15. Mixed logit Rural Dinner Party

1st try

	Attribute	Level	β	P	St. dev	p
Home delivery	**Home delivery Constant**		-7.39476	0.0000	6.79624	0.0000
	Fastest delivery	Same day	-0.74985	0.0917	2.42398	0.0000
		Tomorrow	0.74985			
	Delivery times	Monday untill Saturday (8.00-22.00)	0.51143	0.1936	0.88709	0.0489
		7 days a week (8.00-22.00)	-0.51143			
	Delivery costs	Free	2.69467	0.0000	2.10149	0.0002
		€ 2.50	1.01956	0.0019	0.57553	0.1550
		€ 5.00	-1.31817	0.0023	1.21031	0.0107
		€ 7.50	-2.39606			
	Delivery timeslots	Whole day	-0.36238	0.2633	0.13808	0.7425
		Half day (before or after 15.00)	-1.3151	0.0003	0.49121	0.3543
		Timeslot of 4 hours	0.31885	0.2920	0.51495	0.1740
		Timeslot of 2 hours	1.35863			
Pick-up points	**Pick-up point Constant**		-8.98744	0.0000	5.66884	0.0000
	Fastest Pick-up	Same day	-2.00917	0.0076	1.26512	0.0609
		Tomorrow	2.00917			
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	-0.04687	0.9138	0.83402	0.1923
		7 days a week (8.00-22.00) with adjacent supermarket	0.03671	0.9409	1.51821	0.0310
		24 hours a day on weekdays and in the weekends (8.00-22.00). automated and without adjacent supermarket	0.65544	0.1410	0.9168	0.0857
		24/7 opened. automated and without adjacent supermarket	-0.64528			
	Costs for pick-up	Free	2.10732	0.0001	1.75264	0.0014
		€ 2.50	1.39549	0.0024	0.94792	0.1697
		€ 5.00	-0.07372	0.8900	0.75763	0.1788
		€ 7.50	-3.42909			
	Traveltime	0-10 minutes from home	1.52062	0.0074	2.64074	0.0003
		11-20 minutes from home	1.3315	0.0035	0.86336	0.1314
		21-30 minutes from home	-0.33099	0.4803	0.77008	0.3089
		31-40 minutes from home	-2.52113			

2nd try

	Attribute	Level	β	P	St. dev	p
Home delivery	**Home delivery Constant**		-11.4756	0.0000	9.39809	0.0000
	Fastest delivery	Same day	-0.83763	0.0233	1.3467	0.0002
		Tomorrow	0.83763			
	Delivery times	Monday untill Saturday (8.00-22.00)	0.5663	0.1350	0.24432	0.7719
		7 days a week (8.00-22.00)	-0.5663			
	Delivery costs	Free	3.88569	0.0000	3.07271	0.0000
		€ 2.50	0.81871	0.0043	0.80267	0.0916
		€ 5.00	-1.1757	0.0006	0.29978	0.3486
		€ 7.50	-3.5287			
Pick-up points	**Pick-up point Constant**		-13.1522	0.0000	8.03223	0.0000
	Fastest Pick-up	Same day	-1.54778	0.0103	0.21453	0.7983
		Tomorrow	1.54778			
	Openingtime Pick-up Point	Monday untill Saturday (8.00-22.00) with adjacent supermarket	-0.12194	0.7862	1.05665	0.1753

		7 days a week (8.00-22.00) with adjacent supermarket	0.14952	0.7198	0.31472	0.5798
		24 hours a day on weekdays and in the weekends (8.00-22.00). automated and without adjacent supermarket	0.6486	0.1700	0.21994	0.5597
		24/7 opened. automated and without adjacent supermarket	-0.67618			
	Costs for pick-up	Free	3.13725	0.0000	3.35443	0.0014
		€ 2.50	1.40081	0.0052	1.47311	0.0048
		€ 5.00	-0.8653	0.1368	1.11999	0.0065
		€ 7.50	-3.67276			
	Traveltime	0-10 minutes from home	2.09556	0.0002	2.14252	0.0015
		11-20 minutes from home	0.87965	0.0405	1.50932	0.0011
		21-30 minutes from home	-0.25353	0.6186	0.98451	0.0650
		31-40 minutes from home	-2.72168			
Non random	Delivery timeslots	Whole day	-0.22773	0.4579		
		Half day (before or after 15.00)	-1.39559	0.0000		
		Timeslot of 4 hours	0.43717	0.1308		
		Timeslot of 2 hours	1.18615			