

Finding a New Home

SEARCH DURATION AND QUEUEING FOR STUDENT HOUSING IN THE DUTCH CITY OF GRONINGEN

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Colophon

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Preface

Dear reader, in front of you lies my master thesis: Finding a New Home, search duration and queuing for student housing in the Dutch city of Groningen. This thesis is the final part of the master program of Real Estate Studies at the University of Groningen. I have had a very good time at the University of Groningen where I have started my bachelor Human Geography in 2011. I have learned so much over the years and I am thankful for the opportunities I got at this university. During my year as a board member of the Groningen Student Union I discovered my interest in student housing. We often helped students who had problems regarding housing. This triggered me and I hoped that my expertise as a Real Estate student would help future students with their housing situation.

When I started this thesis I had the idea to finish it sooner than the date of today. But as the program of the master Real Estate Studies, work and the career day committee took more of my time than expected I had to change my goals. I am very pleased with the help of supervisor dr. Mark van Duijn, who helped me during the process. So I want to thank dr. Mark van Duijn with the insights he gave to me during the sparring sessions.

I also want to thank my friends who supported me during the process of the master thesis. And I want to thank my parents who always gave me full support, especially my father Frens Schuring who was always ready to assist me with my English.

I hope you will enjoy reading my master thesis.

Groningen,

A handwritten signature in black ink, appearing to read 'Yaniek Schuring', with a long horizontal line extending to the right.

Yaniek Schuring

Summary

In recent decades student housing markets have emerged in many western countries. In the Netherlands student housing is an important policy concern for the national government and other (local) stakeholders. The national government initiated the national action plan student housing (In Dutch: Landelijk Actieplan Studentenhuisvesting (LAS)). This national action plan, where (local) governments cooperated with private stakeholders had to combat the shortage of housing in the student housing market. This thesis gives insights into factors affecting search duration for housing of students in the Dutch city of Groningen. Search is an important aspect in the allocation of goods and services and therefore housing. The housing market is characterized by a chronic disequilibrium. With the help of survey results on search of 413 students living in Groningen, information about the search process of students in Groningen was obtained.

This thesis finds that a majority of students in Groningen, who are at the begin of their housing pathway, experience search time before acquiring housing. Although a significant minority, almost 40%, stated that they did not experience any search time at all. Descriptive statistics on self-proclaimed factors affecting search duration find that according to most students the lack of housing and the shortage of affordable and qualitative housing were the most important factors affecting their search time. A linear regression showed that many factors did not have a significant effect on search duration. Only the variables *found independent housing*, *use of a broker* and, *number of inspections* showed a positive effect on the duration of search. The amount of *rent* paid for housing was found to have negative effect on the duration of the search process. There is no significant difference in search duration for different groups based on *maximum budget*, *age*, *years before completion* of their study or *education institution*. The outcomes of the logistic regression support this as no difference in odds was found on the basis of these criteria.

The results of this thesis give a first insight in the process of search for students and can help eventual further research on this topic. It could help policy makers as well as businesses in the student housing market with the creation of a more optimal process of search for (prospective) students.

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1. Introduction

In the Netherlands finding (new) housing as a student was commonly associated with the hassle of finding that accommodation. Many students, especially students enrolled at research universities (72.1%), are living outside of their parental home (DUO, 2016). In contrast to for instance the United States where many students live in dormitories, students in the Netherlands typically live in independent (shared) housing. Providing good and adequate housing for students in university cities has been and continues to be an important concern for the Dutch government (Blok, 2015). To combat the shortage in the student housing market, the national government initiated the national action plan student housing in 2011 (In Dutch: Landelijk Actieplan Studentenhuisvesting (LAS)). This led to more student housing nationwide and lower shortage in student housing (Kences, 2015). In the Netherlands, young adults often leave their parental home to live in (shared) student apartments when they enroll themselves in higher education (Mulder and Hooimeijer, 2002). At present living conditions for many students do not meet their personal standards. A nationwide survey, conducted by the knowledge center for the student rental sector Kences (2015), concluded that 55% of all students in the Netherlands had plans to move. Of those potential movers 37% had plans to move within a year. In the Netherlands people in their early twenties are in general more likely to move than people of other age groups (figure 1). People between the age of 18 and 24 mostly move because of the desire to live independently (28%), for work or study (27%) or to cohabitate (16%) (Feijten and Visser, 2005). Within this age group, students share common dispositions and this group therefore points towards the existence of the “student habitus”. Their specific housing behavior is distinguishable from the general population and students are hence seen as a specific housing market group (Chatterton, 1999; Smith and Holt, 2007).

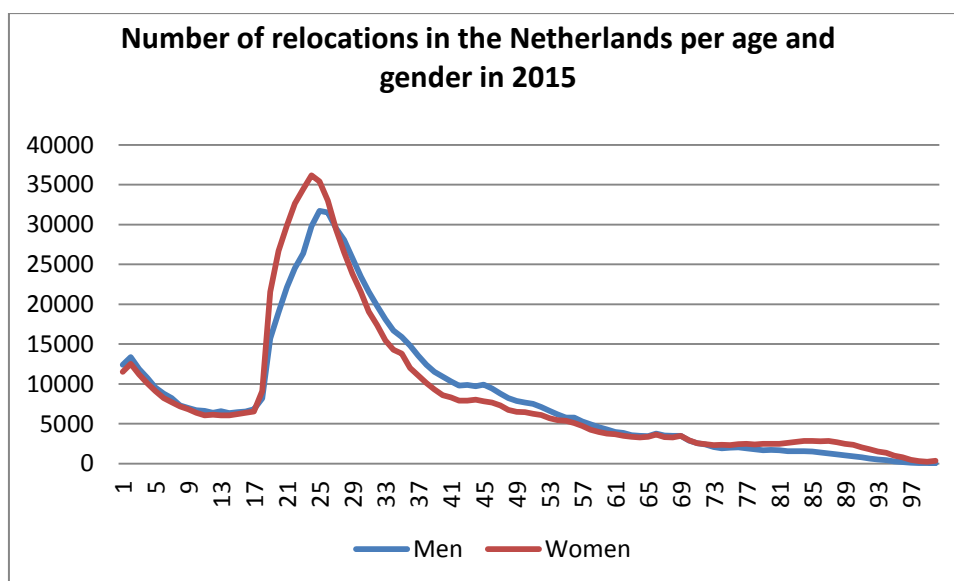


Figure 1. Source: CBS, 2016; Edited by author.

This thesis focuses on relocations of students in the Dutch university city of Groningen, a city where many of its residents are students, both in terms of absolute numbers as well as the relative share of the total population. Groningen has several higher education institutions and the presence of these schools lead to high in- and out-migration of students in the city. In addition to this in- and out migration there is also a high number of students who are moving within the city. A furthermore 22% of students in Groningen consider moving within a year. This is one of the highest percentages among cities in the Netherlands (Kences, 2016 p. 60). Those students all experience search time, waiting lists and queuing for housing. The time between the decision to leave the present house and the actual move to a different house is known as the search time. Search or queuing time are a central part in the process of the allocation of goods and services in general (Cheung, 1974). Supply and demand in the housing market do rarely match which causes a chronic disequilibrium. This disequilibrium can cause a potentially high queuing or search time before a suitable living place is found (Weibull, 1983). Many housing options will not meet a potential tenant's expectations, and both quantitative and qualitative mismatches occur. In theory households start from a position of being matched with their current house. When a house no longer fulfills the household's needs, the incentive to search, and eventually move, to a more suitable house increases (Wheaton, 1990). A new match occurs when a household finds and acquires another housing unit. The search costs for another housing unit is by definition positive. Also, imperfect information in the housing market further increases these costs. This makes the search of living space a continuous phenomenon, not only in the owner-occupier market but also in the renting market (Wheaton, 1990). Students face specific issues as they are often entrants in the housing market (Mulder and Hooimeijer, 2002). The student housing market is therefore considered to be a distinct submarket in many countries (Hochstenach and Boterman, 2014). Relatively little work has been done on how students live during their university period. Christie et al. (2010) state that this might be a result of the assumption that the quality of life as a student is implicitly considered to be unproblematic. They argue that living in (a minor form of) deprived living conditions, in which some Dutch students live, might be desirable for some time to gain some life experience. However, there is much more literature written on the importance of a good home, as it helps to face the stresses of everyday life (e.g. Christie et al., 2010 and Marsh et al., 1999). A policy document of Kences (2015) argues – based on descriptive statistics of a representative sample – that the quality of housing is one of the main reasons Dutch students want to relocate within the city where they pursue their educational degree.

Most student housing in the Netherlands is either part of the private rental market or social housing market. A shortage in student housing was is still common in many Dutch student cities, although this shortage is projected to become less urgent within the coming years (Kences, 2016). This is a consequence of the abolition of the former student grant system. This system was replaced in 2015 with a social loan

system (in Dutch: studievoorschot), a system where students can get financial support with a low interest rate (0.00% in 2016). Students from a low income family get an additional financial grant. The interest rate of the loan is every year determined by the national government and depends on the interest rate paid by the Dutch government on other public loans. These loans have an average expiration time of three to five years and are authorized by the official stock exchange of Amsterdam. The interest rate is determined by average yield of the month September of the previous year (www.apps.duo.nl, 2017). As a result of this new system the former shortage in student accommodations, will in the future probably change into a surplus (Kences, 2015). Although the overall number of students living outside their parental home did not change drastically, the number of first-year student that did so shrunk from 28% in 2014-2015 to 13% in 2015-2016. Even though this percentage is only for first time students, this effect can be expected to eventually influence the overall student population as well (Kences, 2016).

Young people are seen as an important group for policy purposes in the municipality of Groningen (Onderzoek en Statistiek Groningen, 2014). With continuous movement in the city the outcomes of this research could help the municipality of Groningen with improving their policies regarding this constant movement of students in the city.

1.1 Problem definition

The imperfection of the housing market is a major issue in housing market analysis. The relatively high costs of construction, its durability, indivisibility, heterogeneity and locational fixity are all preventing the perfect adjustment of housing to changes in the consumption behavior of housing (Van der Vlist et al. 2002). Although there are theories on queuing, general allocation of housing and time on the market most of this research is focused on the seller side. Only few articles have focused on the buyers side of this process (Baryla and Zumpana, 1995; Anglin, 1997; Elder et al., 1999; Baryla et al., 2000; D'Urso, 2002; Anglin, 1994), and no literature on the search and queue time experienced by students in the Dutch student housing context exists. As many students are moving or have plans to relocate to other housing the issue of search time is affecting this group more than the average population.

1.1.1 Research problem

Housing markets are highly illiquid, as it takes both time and effort for buyers or renters to find suitable homes and vice versa (Genesove and Han, 2012). Many young people leave their parental home during their years as a student. And for many this move is not their only one while being a student. Students often do not follow a clear housing pathway and many do not immediately move after the completion of their high school education. It is unclear to what extent different determinants explain the queuing and search time for student housing and whether there are differences between different student groups. Some

students find housing of their preference in a very short time while others have more problems with finding suitable housing. This research should give an insight in the factors that influence the process of queuing and search duration of students. As finding housing goes with time and therefore costs, maximizing the net benefit of this search time generates a rule for the optimal choice of effort.

1.1.2 Research aim

The aim of this research is to get a better insight in the factors that play a role in queue and search time for student housing and to what extent these factors play a role in the allocation of student housing. This research is specifically focused on students in the Dutch city of Groningen. The intention is that with the findings of this thesis further research on the housing situation of students can be performed and that specific policies can be designed to help students find a room that will meet their personal standards. Students are an important group as they often have a lack in experience in the search and queuing process of the housing market. Students often experience search time and queuing for the first time.

1.1.3 Research questions

This research focuses on Dutch students during the academic year 2016-2017 in the Dutch city of Groningen. The aim of the research is to get a better knowledge of search time experienced by Dutch students in Groningen. This research should answer the following research question:

What are the determinants of queue and search time in the student housing market and how do they affect the process of search in the student housing market?

Sub questions:

- *What are the theories in queuing, search duration and the general allocation of housing for the student population?*

Before acquiring a house there time is needed to find that particular house. The students housing market is a specific niche market with its own characteristics in terms of housing but also in the process of search. This question will be explored by doing a literature research.

- *To what extent do different factors affect queue and search time for students.*

Search and queue time differ per situation. The literature describes different factors that influence the queue and search time for housing. Students were asked to what extent these factors had affected their queue or search time. The survey results will be used to analyze how different factors influence the search time for students. A linear regression with as dependent variable search duration will be performed to analyze the effect that different factors have on the duration of the search process.

- *What are the odds of finding housing for students?*

With a logistic regression it is possible to forecast the odds of finding housing. The odds of finding housing in the next time period is being investigated, while accounting for many characteristics.

1.2 Conceptual model

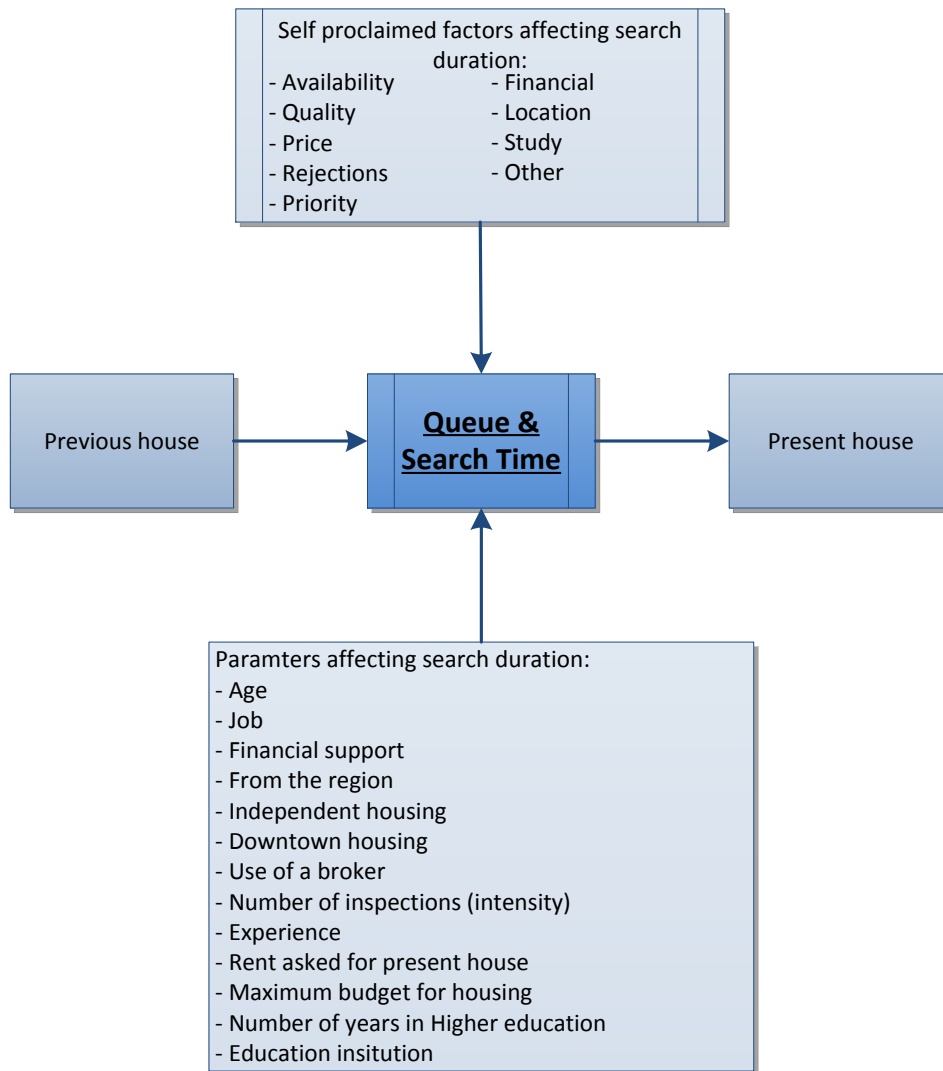


Figure 2. Conceptual model

Figure 2 shows the search process for a new accommodation. This simplified model starts with the previous house of a student, which can be either their parental house or outside their parental home. Different parameters were, based on literature, found to have an effect on search duration. In addition to these factual factors also the self-proclaimed factors are added in this model. The extent to which these factors affected the search duration of the respondents were explicitly asked in the survey in addition to the factual questions. This research is only focused on successful search processes and therefore all respondents have completed their search process.

2. Theoretical framework

Existing literature is reviewed to understand search and queue time and the housing pathway, for young people, specifically students. There is limited literature available on search time of the buyers (or renters) side (Genesove and Han 2012, p. 32). So general theories are used as well as specific research on the student housing market and housing pathways. In the following chapters the concepts of search and queuing for housing, demand for student housing, allocation of housing and the concept of leaving the parental home with the housing pathway will be reviewed.

2.1 Search and queuing for housing

As already stated in the introduction search and queue mechanisms are central in the allocation of goods (Cheung, 1974; Barzel, 1974). The time between the decision to move and the actual move is the search time. The desire to move arises from the need for housing and/or the dissatisfaction of the present house. According to some scholars this largely arises from changes in the life cycle of a household (Rossi, 1955). Other scholars have argued that an unsatisfied housing need could also be a result of changes in the environment, as well as changes in the household itself (Brown and Moore, 1977). McCarthy (1977) has argued that housing needs are often accompanied by an increased income to enable the relocation. Other factors affecting residential mobility are job changes, the loss of a job, and unemployment (Clark and Withers, 1999). In addition, Coupe and Morgan (1981) suggest that changes in a household or environment must be seen as a necessary condition for mobility and not as a sufficient explanation. They argue that housing needs are dependent on residential history or that they are conditioned by the housing market and institutional characteristics external to that of the household (Murie, 1974).

The need for housing is accompanied with the search for housing. Behavioral and neoclassical economics have different views regarding the process of search (Dunning, 2016). In the behavioral economics the housing search process is seen as a process of significance. Information that is needed is not known upfront and therefore needs to be collected; this information can shift the preferences a searcher has. This is in contrast to neoclassical economic models where it is assumed that households have complete information about the housing market. The search process includes extensive and intensive stages. The extensive stage is the stage where a household has a desire to move but does not take action and the intensive stage can be seen as the active search time before buying a house (Dunning, 2016). The search duration in this thesis is based on the intensive stage.

The intensive stage itself can be experienced in many ways, as different allocation mechanisms are in place in the rental market. The process of allocation clearly takes time and effort, both for the provider as well as the seeker, as they have to come to a mutual agreement. A common tool to analyze the search

process for the housing market is search theory (Albrecht et al., 2016). A typical search model assumes that there are opportunities distributed that are waiting for a potential buyer (Anglin, 1997). In the housing sector these opportunities are the sellers or landlords of a house that they want to sell or let for a particular price. The housing market is a dynamic market with constant entering and leaving of households. These households are coming from either permanent accommodations or temporary accommodations (Van der Vlist et al. 2002). Accommodations considered as permanent are apartments, detached, semi-detached or terraced houses. These temporary accommodations can be shared accommodations, accommodations shared with another household, living in a motel, living in a slum, but also circumstances designated as (temporarily) homelessness can be seen as shared accommodations (Van der Vlist et al. 2002, p. 279).

The pattern of the relocation of households itself has changed over the years. In the last decades living patterns have changed considerably, people became more mobile and move easier from one place to another. A result of this more mobile living pattern was a rental market that became more important to facilitate the higher mobility in the housing market of many western countries (Wang and Chang, 2013) (note: not all western countries have an important rental market). Renting became particularly important for people at the start of their career and for people with a low or an insecure income. In the Netherlands also the change in the age of leaving the parental home increased the demand for rental housing. As young people left their parental home earlier than previous generations, and they more often started to live on their own instead of living together with a partner. These people are thus more likely to rent a house instead of buying one (Mulder and Hooimeijer, 2002).

Dutch rental market:

The Dutch rental market consists of a private rental sector and a social rental sector. Almost 80% of the Dutch rental dwelling stock consists of social rental dwellings (Ministry of the Interior and Kingdom Relations, 2013). The social rental sector is known for its broad target group and large size. The social rental sector is not only for lower income groups, but also for households with a middle or a higher income. Although is changing as a result of legislation introduced under pressure of the European Union (Hoekstra and Boelhouwer, 2014). Since 2015 80% of the social housing has to be allocated to lower income households (Households with an income till €35.739 (2016 price level)). Additionally households with a low income are eligible for government subsidies for housing (Rijksoverheid, 2017). The remainder of the renting market consist of the private sector, housing in this sector is either liberalized or is subject to a rent ceiling.

Both in the case of renting as well as buying housing, search and queue time can be expected. This search and queue time a household experiences before acquiring housing can exist both in the form of a formal

waiting list as well as in the form of an informal search process. Public or social housing is characterized by a demand that often greatly exceeds the units of housing available (Kaplan, 1988). For many formal social housing accommodations queuing is inevitable and is characterized by a system in which the one with the longest waiting time gets a priority for available housing. In the Netherlands the position on this waiting list is also influenced by special circumstances; for example a pregnant woman gets a priority status on the waiting list. These potential tenants have the right to refuse an available house, so their personal preferences are hence also having an impact on search or time or queuing (Hochstenbach and Boterman, 2014). Waiting lists often seem to be longer than they are in reality, as many applicants drop out before being eligible for social housing (Kaplan, 1988). The private rental market is made up of two sectors: the free market and the affordable private rental-sector. They are both typically allocated without the need for formal queuing. This process is different from what is common in the social-rental sector, as landlords can decide by themselves how they want to allocate their housing stock.

Thus different queuing methods are in place, and as the housing market is an imperfect market, an allocation mechanism is needed. A queuing method of indivisible goods is described as a good or service that can be distributed by a planner (Svensson, 1994). These goods can be houses but also building sites, jobs, day care places, etcetera. These goods are being allocated among a finite number of individuals. There is supposed to be no divisible good (money) that can be a replacement of the differences in value of the indivisible goods. The planner does not have exact information about the correct equilibrium prices in this method but he does have to set the prices of the goods. Svensson (1994) states that as a consequence, it becomes important for efficiency that differences in individual preferences are properly taken into account in the allocation procedure. This non-market allocation is common with many goods provided by one institution like a housing association or a local government. This type of allocation makes queuing a formal process where the market has very little or no influence in the process of allocation. Student housing in the Netherlands is only partially influenced by an allocation mechanism as described by Svensson (1994). It is also influenced by market factors, as many students do not rent housing from housing associations but rather from private landlords. These private rent lords however, are in many cases obliged to a maximum of rent they can ask for a certain room (Rijksoverheid.nl, 2016). This makes the queuing process for student housing more complex as different search and queuing systems are in place at the same time.

Common economic theory argues that goods and services will be allocated efficiently to consumers that are willing to pay the highest price for it, and that this form of allocation is pareto efficient. Such an allocation is not gained automatically when a shortage of the good occurs. In this case other mechanisms for rationing goods such as queues or lotteries substitute the price system (Glaeser and Luttmer, 2003).

These mechanisms are unlikely to reproduce the efficiency of the market. So in a rental market that is rent controlled, just as the market for student housing in the Netherlands, there are evidently welfare losses compared to a rental market with free market prices. Figure 3 illustrates these welfare losses (area ABC). This standard microeconomic theory shows that in a market with rent control a permanent undersupply exist. So in terms of housing this means that people, in this case students, will find another way to acquire housing. They, or for instance their parents, might buy a house for them or they will decide to rent in another sector, like the liberalized rental sector. Some might also decide to not move to a certain area

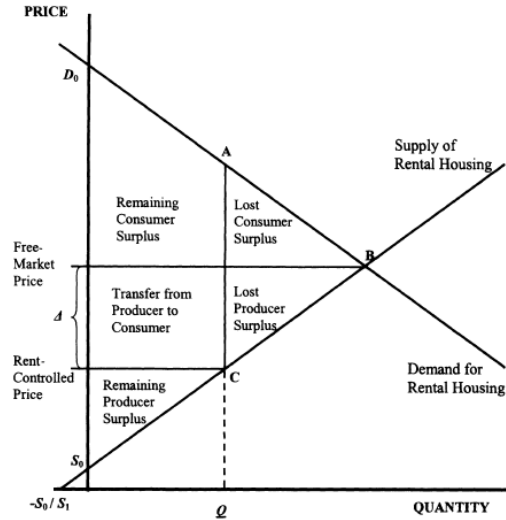


Figure 3. Classical analysis of welfare losses from rent control (Edward et al., 2003).

because of the housing disequilibrium (Glaeser and Luttmer, 1997). Queuing and the search for housing is due to the different ways to get housing not a simple process, as the individual housing queue is also influenced by decisions one makes in the process of finding a new house to live in. For instance one can first try to get a house from the local housing association but as this queue might be too long, one can decide to either buy, rent on the controlled private housing market or to try to get housing in another way. This shows the importance of the demand for housing as a factor which will be further reviewed below.

2.2 Demand for student housing

The demand for housing is an important factor in terms of search and queuing. A dominant view in housing studies sees the housing market as a market of commodities, as tradable assets. Housing is as a consequence in constant a state (dis)equilibrium and it is continuously seen in a process of matching with the demand and supply (Clark and Dielemand, 1996). Due to so called market imperfections such as rent control and trade friction, the imaginary demand and supply do rarely match in all segments of a housing market (Weibull, 1983). Long term housing demand depends on ‘classical’ factors like demographics and ethnic characteristics. Housing demand in short-run models mostly focus on the financing variables and short-term profitability as the most important factors of these models. However the underlying forces behind these short-term models are demographic (Maisel, 1963 and Jaffee and Rosen, 1979). The makeup of the population in the market is therefore having a profound impact on the housing sector. On the other hand the availability of housing is also influencing demographic changes (Smith et al., 1984). As for instance the wide availability of student housing in a neighborhood will attract students to an area.

An ideal house is a house where people want to live if they had no financial constraints and if there were no shortages on the demand side. In most cases this is an unrealistic dream scenario. Musterd (1989) uses a so called aspiration desire to describe someone's real, more realistic desire in the housing market. Particular characteristics were found to be of large importance to students. In the Norwegian student city of Trondheim the most preferred location of student housing for students was found to be close to the city center and nearby their education institution. The quality of housing characteristics was also found to be of the same importance as the location of the housing (Thomsen and Eikemo, 2010).

Students generally do not have an income large enough from labor to live on their own. It is, particularly for university students, often necessary and considered normal to live away from their parents. Their income is apart from small labor income obtained from state grants (since recently social loans in the Netherlands) and financial support from their parents (Mulder and Hooimeijer, 2002). The personal income as Smith et al. (1984) use in their equation to forecast the headship of households is therefore influenced by their parent's socio-economic status and the willingness to take a (higher) student loan (Mulder and Hooimeijer, 2002). However, it must be noted that the relationship between the financial resources of a student's parents and leaving the parental home is not that obvious. It also occurs that students with richer parents are less eager to leave their more spacious home where they have more privacy (pull factor).

The student housing market is often described as a niche market. A niche market is a market where supply has become adapted to meet the needs of a specific, specialized group, and displays a reluctance to meet demand from another source (Rugg et al., 2000). For the student niche market particular characteristics as the type of accommodation, letting arrangements and the type of landlord apply. And while a student's income is low they are able to rent adequate housing. This is mainly because of the fact that students collectively are able to pay a higher amount of rent than for instance low income families (McDowell, 1978). The process of the allocation of housing is further discussed in the next paragraph.

2.3 Allocation of housing

On average people in the Netherlands move seven times during their lifetime, whereas younger people tend to move more often than older people. For the year 2014 this means that a total of 1.6 million people in the Netherlands moved from one house to another one (PBL, 2016). By moving to other housing, households are creating space for other households and they therefore create a dynamic housing market. The moving behavior of households can be described as a stochastic dynamic process in which the moving decision of a household depend on information which is obtained over time (Van der Vlist et al., 2002). This information can be acquired with the help of various channels, but often a realtor or broker is

used. Brokers do effectively reduce the search time for their clients as they have often better knowledge of the (local) housing market (Elder et al., 2000). When a household relocates to another house they create space for other households to move to the former house. Rossi (1980) argues that the movement of households depends on whether they are satisfied with their housing in terms of neighborhood characteristics, costs, housing characteristics, and personal circumstances. However Morrow-Jones and Wenning (2005) also point out that moving to another housing unit depends on specific features of a household like income, job, age, and marital status. Probably the most important factor however, are changes in the household itself, as households form, break up, experience income growth, job loss, or job relocation (Clark et al, 1986). Because these changes in a household are often associated with a residential move, households might eliminate the gap between their actual and desired levels of housing consumption by moving (van der Vlist et al, 2002). The process of search and search time is also influenced by the number of houses a seeker inspects, as buyers and renters of housing often inspect several houses before finding their potential home (Anglin, 1997).

The relocation process in the residential housing market has many frictions. A chronic disequilibrium, the available choice set and, asymmetric information do all affect the housing market (Weibull, 1983). These 'market imperfections' are influenced by trade frictions and rent control. Signals of a disequilibrium in the housing market are vacancy rates and queuing or search times. Weibull (1983) developed a dynamic stock-flow model to analyze and simulate housing markets with partial rent control, trade frictions and spillovers. For every dwelling that is being relocated to another occupier there is an allocation channel where these dwellings are traded. Weibull (1983) give examples of different types of housing markets. Examples of a housing market is a market where housing prices are endogenously determined by market conditions, and where trade takes place between individual buyers and sellers. But markets can also have the form of a (public) rationing office, where such offices offer dwellings to queueing households at exogenously fixed prices. Besides the legal allocation mechanisms Weibull (1983) also noted the black market, which is likely to develop in a real life housing market with some rent control. An example of the black market in the student housing sector is for example the often illegal (temporarily) sublease of student rooms.

In practice however, students are quite creative in finding housing. With their often limited access to adequate financial resources they often pursue specific strategies drawing on other forms of capital than just money to access housing (Boterman et al. 2013). Local social networks and knowledge about the local housing market often helps students in acquiring access to housing (Brown and Moore, 1970). Students who do not have those networks can however, compensate for this with a longer or more intense search time (Kohn and Shavell, 1974).

2.4 Leaving the parental home and the housing pathway concept.

The Netherlands has a Northern European pattern of relatively early home-leaving (Billari et al., 2001) with many young people living without a partner (Iacovou, 2001). De Jong Gierveld et al., (1991) have identified three categories of motives for leaving the parental home: the formation of a marital or consensual union; enrolment in higher education or taking up a job elsewhere; and a desire for autonomy, privacy, and independence. When young nest-leavers leave their parental home to live in a more urbanized area, like most of the university cities in the Netherlands, it is more likely for them to live in a shared accommodation (Kruijthoff, 1994). Leaving the parental home is also influenced by geography, de Jong et al. (2007) found that native Dutch students from the more rural provinces of Friesland, Groningen, Drenthe, Flevoland and Zeeland are leaving their parental house almost one year earlier than youngsters from other parts in the Netherlands. This is mainly because of the lack of higher education institutions in those provinces.

Traditionally leaving the parental home was associated with getting married and starting a new family, however since the 1960's this has changed in the Netherlands and many other Western and Northern European countries (De Jong and Van Hoorn, 1999). Young people left their parental home earlier because of a better economy and an increasingly individualized society. In the 1980s this changed again and the youth stayed home for a longer time. The lack of adequate financial resources, a higher youth unemployment at that time and less suitable housing were seen as the main causes. There is also an increased desire to keep the future as flexible as possible (Mulder and Manning, 1994). In the 1990's the age of leaving the parental home dropped again. Despite the older age when the youth started to live together with a partner the average age of leaving the parental home shrunk. This was an effect of more youth following higher education, which led to more youth leaving home early to live in student cities (De Jong et al., 2007). Since recent years the age when youngsters are leaving their parental home is rising again. The average age as of 2016 is 24.6 years old (CBS, 2016). As a result of the further increase of flexibility of the labor market in the Netherlands and the changing law on the financing of students, the average age is expected to increase in the future (Van Duin et al., 2016).

Leaving the parental home is the first step in one's independent housing pathway. A housing pathway is defined by Clapham (2002, p. 63) as: "patterns of interaction (practices) concerning house and home, over time and space". These patterns are part of the concept of mobility in everyone's life-cycle. In general these housing patterns tend to follow a particular order; these patterns are part of a person's own housing career (Ineichen, 1981). Housing pathways can be influenced by differences in parental support, ethnic background, and level of education where specifically parental support seems to play a crucial role in enabling young adults to achieve independent living (Heath and Calvert, 2013). In contrast to what

Clapham (2002) refers to as positivist housing studies, Clapham's pathway approach does not assume that households have a universal set of preferences or act rationally in their attempts to meet these preferences (Clapham, 2005 p. 29). The concept of housing pathways is seen as more accurate than the concept of a housing career, as the latter would suggest that there is only an upward way for housing and/or neighborhood quality. All the individual housing steps a household makes are part of their housing pathway.

Ford et al. (2002) have identified five sorts of pathways: chaotic, unplanned, constrained, planned (non-student) and a student pathway. These pathways are the function of differences in the combination and intensity of three main factors: the ability of young people to plan for and control their start of independent living, the extent and form of constraints that characterize their access to housing (income, access to benefits, the character of local housing market and so on), and the degree of family support available to them. They highlight the importance of the parental safety net, as parental safety enables students to follow a more linear housing pathway. A chaotic pathway is characterized by an absence of planning, substantial constraints (economic as well as housing eligibility) and often by the absence of family support. An unplanned pathway is defined by a lack of planning, substantial constraints, but with the availability of some family support. A constrained pathway is a pathway with clear planning but within the context of substantial constraints and family support. The planned (non-student) pathway is characterized by some substantial planning but within the context of fewer and more manageable constraints and with the availability of family support. And last the student pathway; this is planned with an anticipated exit from the parental home to attend higher education. Ford et al. (2002) state that constraints for students are manageable through the provision of higher education institution (HEI) accommodation and housing at the private rental student housing market. Although Ford et al. (2002) describe the British situation, students do have easy access to student loans in the Netherlands too.

Although these student loans help students in their housing situation Hochstenbach and Boterman (2014) have found class differences and inequalities between 'outsiders' and 'insiders' of young people on the housing market in Amsterdam. Insiders (originating from Amsterdam) belonging to the middle-class were found to be able to gain access to several desirable apartments in up-market and gentrifying neighborhoods as they were having access to other capital. -These insiders were much more likely to follow the seemingly ideal linear housing pathway. This was even despite having little waiting time to access social housing and having only a modest income. But most young people were found to follow a chaotic pathway. Particularly youngsters from outside the Amsterdam region who were having little knowledge about the local housing market in Amsterdam. They were found to acquire housing which comes to them via their own network, this housing was mostly informal and temporary. Young people

often deliberately choose a chaotic housing pathway when this allows them to have better housing in the future (Hochstenbach and Boterman, 2014). So more experienced searchers have an advantage in finding better housing and can be expected to search for less time. Experience can be defined as a significant factor in the process of finding better housing. Turnbull and Sirmans (1993) have shown that first time house buyers and buyers that are moving from “out-of-town” do not pay a higher price for their house. Various institutions and time are suggested to offset any inherent disadvantage for those buyers (Jud and Winkler, 1994).

2.5 Hypotheses

Although not much is known of the search process of students, some general hypotheses can be stated following the theoretical framework. Three different hypotheses are stated, and they are followed with a short explanation. Typical search theory suggest that search duration is influenced by different factors. The influence on search time of those factors is the basis of the following hypotheses.

- *Students experience different self-proclaimed factors (e.g. availability, quality, price, rejections, priority, financial, location, study, and other) affecting their search duration.*

As described in the literature different factors influence search duration, this first hypothesis will focus on the self-proclaimed factors and are therefore attitudinal data (Gonyea, 2005). A factor as the availability of housing should have a large effect on search duration (Weibull, 1983). As there is still a student housing shortage in Groningen it likely that many students experience search time because of this shortage. The quality of housing was found to be one of the most important aspects of housing and students therefore have to search more extensively to find housing which fulfills their demands (Kences, 2015). Price is also expected to be an important factor as students have limited means and because of the recent abolition of the student grant system. The factor of rejections, is thought to be less important as not all student houses are able to reject possible future housemates. Location influences are thought to be important as students typically want to live close to their education institution or the downtown area (Thomsen and Eikemo, 2010). The factors of priority, financial means to search and study are probably less important as those factors can be avoided by the seeker (e.g. a student can decide to find housing without paying for the search process).

- *The search duration experienced by students for housing depends on demographic, structural and neighborhood characteristics.*

After a scientific literature review several characteristics that have an influence on search duration can be distinguished. Personal characteristics like age, income and geographical background have a possible influence on the length of the search. Theory on search duration for housing argues that housing with a higher asking price often has a higher search duration than housing with a lower asking price (Stigler, 1961 and Yavas, 1992). It can also be expected that students who found an independent housing unit experience a longer search time than those who search for student rooms, as such housing is more expensive. Additionally specific location characteristics could lead to higher search time as the downtown area is more popular among students than other areas (Thomsen and Eikemo, 2010). Students with more experience in the search process, as of their older age or familiarity with the search process, are expected to find housing more easily than those that lack this experience. Although students from the region are expected to find housing in the same time as students from outside the region as they compensate with a higher search intensity (Kohn and Shavell, 1974). However, other research argues that in order to offset the disadvantage of movers from “out-of-town” more time is needed to find housing (Jud and Winkler, 1994). Students who use a broker or agent to find housing are expected to have less search time than those that search for themselves as the broker helps them with knowledge and therefore reduces the search time for their clients (Elder et al., 2000).

Students have higher odds for finding housing depending on the elapse of time, personal characteristics, neighborhood characteristics, and structural characteristics.

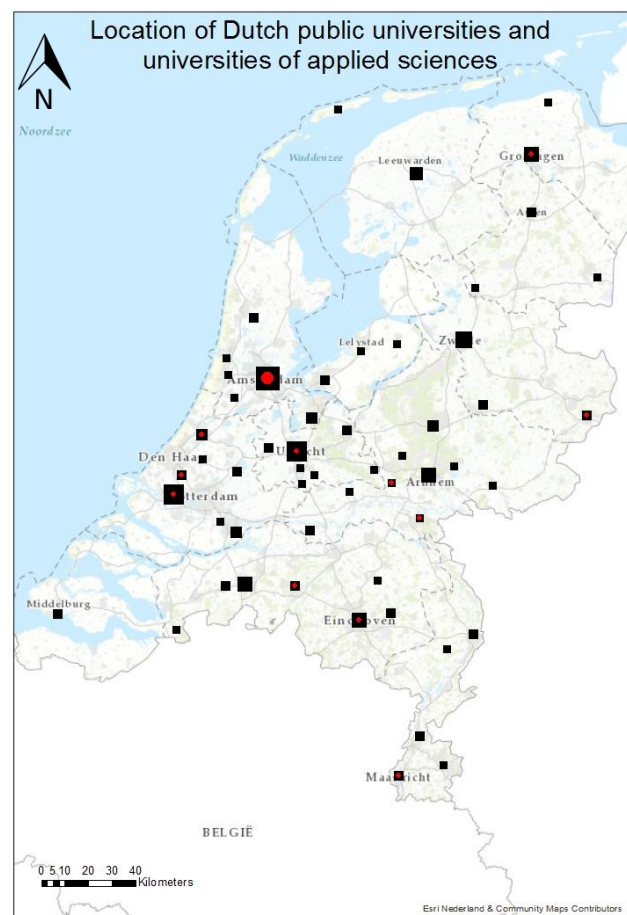
The odds of finding housing during a time stage is estimated in relation to zero search duration. It is expected that students need search time before acquiring housing. It is therefore expected that with the elapse of time the odds of finding housing will rise. Various independent variables are expected to have an effect on the odds of finding housing, these independent variables are discussed in the previous hypothesis.

3. Context of students and student housing in the Netherlands

3.1 Higher education in the Netherlands

Two types of higher education can be distinguished in the Netherlands: research universities (WO) and universities of applied sciences (HBO). There are in total 13 research universities and 37 HBO facilities in the Netherlands that are, according to the law, funded by the national government (these numbers exclude the also funded Open University, military institutions of higher education and theological universities)¹. In addition to these publicly funded higher education institutions there are also private education institutions not funded by the government (example: Nyenrode Business University) and offshore universities (example: Saba University School of Medicine). Although these institutions are not funded by the national government they are having a positive accreditation of the NVAO, the independent accreditation organization for the Netherlands and Flanders (NVAO, 2016). Universities of applied sciences can be found all across the Netherlands. Research universities however, are mostly located in the more populous western and southern part of the Netherlands. The university of Groningen is the only research university located in one of the three northern provinces of the Netherlands.

In the last decades the enrolment of higher education in the Netherlands has grown substantially (Goedegebuure et al., 2014). The surge in the number of students in the Netherlands was initially related to demographic factors like the baby boom after World War 2. But also the economic benefits of studying after secondary education were emphasized to play an important role in the rise in students (Sá et al., 2004).



Map 1. Distribution of Institutions of higher education in the Netherlands

(Red is Research University, black are universities of applied sciences, the size gives an indication of the number of institutions not the number of students, the location of the institutions is based on the municipality).

¹ art. 1.8 lid 1 WHW (Dutch law on higher education, only available in Dutch)

Dutch education is characterized by a system of shared funding, with direct funding to universities and subsidized tuition fees, but also through direct student support in terms of students loans and grants to students from low income families (Vossensteyn, 2005). Students are also eligible for a public transport card that allows them to travel for free during weekdays or in the weekends. As a result income seems to have a less pronounced effect on whether young people attend higher education or not (Sá et al., 2004). Nevertheless tuition fees have risen continuously since 1986, and the system of direct student financial support has altered many times. Most recently with the transformation of the direct student grant into a social loan which students have to pay back after the completion of their education. But despite the lower financial support from the government to students, this does not seem to have an overall negative effect to the access to higher education (Vossensteyn, 2005). However the effects of the newly implemented social loan system are not yet clear.

3.2 Student housing in the Netherlands

In contrast to some other countries the vast majority of the students in the Netherlands do not live in accommodations specifically designed for students, like halls or dormitories. They rather live at their parental home or in rooms with shared kitchens and other facilities. Students can have a desire or are due to geographical distances more or less forced, to move when they start studying. This also depends on their (economic) constraints and the distance they have to travel from their parental home to the location of the higher education institute they attend. The housing occupied by students is typically used throughout the year (Mulder, 2010). In contrast to most students in for instance the United States, living on a student campus is very uncommon in the Netherlands. Most students either live with their parents or live throughout university cities, where they are often concentrated in and around the city center. Kences (2015), found that in almost all cities, with the exception of Ede and Leeuwarden, the demand for student housing exceeds the amount of housing offered. Although in the coming years Kences (2016) expect this to change in many of these cities, this is a consequence of the implementation of the new social loan system for students in the Netherlands.

In many countries a specific student-housing market exist (Hochstenbach and Boterman, 2014). This specific housing market for student emerged as students often share a similar housing demand and experience the same kind of housing. As a lot of students tend to live in larger student housing facilities this gives them the opportunity to gain social capital as well as cultural capital. This helps them with, for instance, knowledge about the student housing market. Rugg et al. (2004) described this as the student advantage that will help them to enhance their later housing opportunities.

As higher education institutions are spatially concentrated in certain cities, students often move to those cities when they start studying, or commute between their parental home and the institute of higher education they attend. As research university students are more likely to move and thus leave their parental home than their HBO counterparts, cities with research universities like Groningen, Enschede, Eindhoven and cities in the Randstad are having a higher share of students within their population (Feijten & Visser, 2005). In the United Kingdom neighborhoods with a high influx of students experienced a process of 'studentification'. This process of studentification leads to less single family households and more houses that are being converted into student housing. The partition of these houses into separate student rooms is mainly done by small scale institutional actors (Smith, 2005).

Most students rent housing from either social housing corporations or a private landlord with some students living in their own housing or housing provided by family or friends. In Groningen the majority of the student rooms are provided by private landlords. The private sector is divided by two types of housing: the free-market and the affordable-private rental sector (Van der Veer and Schuiling, 2005). These two sectors have to be seen as two separate sectors as the free-market private rental sector has no price regulations. As rents in this sector are generally high, most students do not rent housing in this sector. The affordable rental sector however is much more popular among students. This sector offers housing below the rent cap, which makes economic capital less important in the allocation of these houses (Hochstenbach and Boterman, 2014). This sector consists of many small private housing actors. The affordable rental sector offers a wide range of housing qualities. Exploitive landlords that take advantage of new students are for example a well-known phenomenon in the affordable rental sector (Christie et al., 2010). For landlords on the private housing market student housing is an attractive market. They can ask a higher (combined) rent as the combined resources of students are higher than those of other potential tenants. Additionally students will often accept a lower standard of housing, knowing that they will only live there for a certain period of time (Rugg et al. 2000).

4. Methodology

The aim of this research is to get a better insight in the search and queuing duration of students in the Dutch city of Groningen. Whereas Anglin (1997) and Baryla and Zumpana (1995) look at the search behavior of the buyers, this research focuses on students, who typically do not buy their own house. This thesis focuses on students in the Dutch city of Groningen. Extended general search theory also used by Anglin (1997) is used to analyze the search time of students in Groningen. Search duration in weeks is the dependent variable and is used as such in a linear and logistic regression. Additionally the self-proclaimed effect of different factors was asked in the survey, this to get an insight in personal factors affecting the search time of different student groups.

4.1 Survey

The data used in this thesis is collected from specially-designed questionnaires involving student housing preferences and search duration for housing (Appendix I). This form of data depends on willingness of people to respond to questionnaires (Baruch and Holtom, 2008). The vast majority of contacted students were willing to participate. Although not everyone was willing to participate in the survey, either as they did not respond to a general post on social media or as specifically declining to fill in a hard copy of the survey. The first is hard to determine and the latter did happen, although the vast majority of contacted students were willing to participate. The data is provided by almost 450 respondents, who all were registered students and living in the Dutch university city of Groningen. The questions asked in the survey are based on the existing literature discussed in the theoretical framework. Several strategies were used to increase the response. The drop and pick-up strategy was used in multiple buildings of both the University of Groningen as well as the Hanze University of Applied Sciences. In addition to this strategy internet surveys were used. They were collected by reaching out to students by email, Facebook posts, and (private) WhatsApp messages. The data is collected in September 2016.

Data collection in the form of a questionnaire is used, as the aim of this research is to get an insight in the housing behavior of students. With a standardized questionnaire it was possible to get information of the characteristics, behaviors and attitudes of the student population in Groningen (McLafferty, 2010). As no data about the search process for students in the city of Groningen existed the data had to be collected. Different types of survey questions were used, but most questions were asked in the form of fixed-response questions. The open-ended questions asked generally demanded only a short answer. Students were asked how many weeks they actively searched for their current home. The multiple choice questions regarding the self-proclaimed reasons of a student's search time were made to get a better understanding of the search time experienced by students. Respondents were able to give an answer on the importance on the Likert format with a five-point scale. This format gives the respondents the possibility to not only

express if a factor was of importance but also to give an indication of the importance of a particular factor in their search process (Flowerdew and Martin, 2005). The 'don't know' or 'other' option was an option by many of the questions, to allow for the fullest range of responses (McLafferty, 2010). Additionally the questions asked should be easy to interpret for the respondents, this is in interest of the whole research and the validity of the survey (Chang, 1994). The survey questions were asked in Dutch as the target group of this research is Dutch students in the city of Groningen. The survey implicitly noted that the answers provided by the respondents are used anonymously and only for scientific purpose. The end of the survey some personal information was asked. To increase the response the respondents were able to win a cinema voucher, the email address they gave to make a chance of winning this voucher was only used to contact the winners.

The use of survey data goes with some degree of uncertainty of quality of the data. Survey responses in are in general not totally reliable, as even such salient features of an individual's life, as for instance years of schooling, is being reported with some degree of error (Bound et al., 2001). For linear models errors in the dependent variable of stochastic nature neither biases nor renders inconsistent parameter estimators. It does however change the efficiency of those estimates. A fundamental and important problem with the questionnaire used is however that it is impossible to systematically gather information on all aspects of a buyer's search behavior (Anglin, 1997). In general all information gathered from survey data is factual or attitudinal (Tourangeau et al., 2000). Factual questions are objective-type measures involving characteristics, behavior, or circumstances of the respondent. An example is a question about the living situation of the student. Factual data range from data straightforward and readily verifiable to data that is difficult or even impossible to authenticate. As this research had no access to other information of the respondents, no verification about the rightfulness of the data could be made. Both the linear as well as the logistic regression used in this thesis use information gathered based on factual questions. The attitudinal type of question, are in contrast to the factual questions subjective, based on personal beliefs or perceptions (Gonyea, 2005). There is no source outside the respondent that is able to verify the truthfulness of the answers given to these attitudinal questions.

The questions regarding self-proclaimed factors of a students' search duration were asked in the Likert Form. And they are shown along with the literature, which is discussed in chapter 2, in Table 1. It is therefore important to state that the data from these question need to be interpreted with caution as a gradation factors can be interpreted in differently per respondent (Pace and Friedlander, 1983). Self-reported data cannot be seen as a substitute for objective measures. The credibility of such data is influenced by social desirability and the halo error. Both have a negative effect on the validity and reliability of the data and they can they can reduce the likelihood that from the data meaningful

conclusions can be drawn (Gonyea, 2005). The social desirability of answers in this thesis is likely to be small as the survey was done online and paper instead of face-to-face interviews (Tourangeau et al., 2000). The halo error, based on the tendency to give consistent evaluations across a set of specific items based on a general perception of the subject, is the other possible influencer of reliability. This error is of possible larger influence to the data of this thesis, particularly for the data of self-proclaimed factors. Respondents tend to ignore characteristics or specific criteria that add variance to responses within a particular set of questions (Symonds, 1925).

Table 1. Self-proclaimed explanations of queue and search time used in the survey

<i>Determinants of queueing time</i>	<i>Literature</i>
Availability of housing	Weibull, 1983
Quality / requirements	Thomsen and Eikemo 2010
Price	Morrow-Jones & Wenning, 2005
Rejections / Refuse offered housing	Hochstenbach and Boterman, 2014
Priority	Albrecht et al., 2016
Financial	Mulder and Hooimeijer, 2002
Location	Rossi, 1980
Study reasons	Additional student factor.
Other	Self-expressed factors

4.2 Linear regression

After processing the survey data, the relevant variables are investigated by using STATA 14.0. The dependent variable is search duration in weeks, this variable is based on the active search of respondents before they found their current housing. Search duration, and a set of data in general, are in the literature often investigated by a linear regression (Montgomery et al., 2013). Search duration, just as other duration variables, falls within some intervals and thus does not represent an exact point (Ryu, 1994). The aim of a linear regression is to estimate to what degree different independent variables influence the change of the dependent variable (Weisberg, 2005, p. 1). The independent variables are shown and explained in Table 2.

Table 2. Overview of independent variables

<i>X-variables</i>	<i>Explanation</i>
Age	Age in years
Job	Having a (part-time) job, in contrast to those who are not having a job.
Financial support family	Financial support from family, in contrast to those that do not get financial support.
Region Groningen	Students originally from the city region Groningen-Assen, in contrast to students from elsewhere. ²
Independent housing	Found independent housing in contrast to those that did not.
Downtown	Found housing in the downtown area (“Binnenstad” neighborhood), in contrast to those who found housing in other neighborhoods.
Use of a broker/realtor	Use of a broker in the search process, in contrast to those who did not use a broker in their search process.
Number of inspections	Search intensity, how many inspections before housing was found.
Experience (Previous living situation not with parents)	Experienced in living alone and therefore already having search experience, in contrast to those who were previously living with parents or caregivers.
Rent	Monthly rent.
Maximum budget	The price willing to pay for housing, compared to those having a maximum budget of €250-€300.
Education institute	Education institute other than University of Groningen, compared to those studying at the University of Groningen.

The variable *broker assisted* is defined as students that have used a broker to acquire their current housing. *Rent* is the present rent paid for housing. Research predicts that a higher asking price for housing also leads to a higher search effort. Both Stigler (1961) and Yavas (1992) show that the buyer search intensity increases with a higher asking price. The variable *max budget* is chosen instead of the variable income. As already described income for students is harder to use as a factor, as students have the ability to borrow money from the government provided in the form of social loans. The *max budget* is therefore an indication how much students are willing to pay for housing. Students who migrate from out of the region of Groningen generally have higher across-search costs than native students (*Region Groningen-Assen*). This as seeking for new housing implies that they lack a local residence and therefore have to incur out-of-pocket costs to conduct their search. They also have an informational disadvantage relative to local

² Region Groningen-Assen includes the following municipalities: Assen, Bedum, Groningen, Haren, Hoogezand-Sappemeer, Leek, Noordenveld, Slochteren, Ten Boer, Tynaarlo, Winsum and Zuidhorn.

searchers. These higher out of pocket costs however, likely have a positive effect on the search intensity as their need for housing is higher.

A variable that is clearly of an advantage is however the factor *experience* in the search process of housing. Students who move for the first time have less knowledge how the local housing market works. This factor is also used in the form of a dummy variable in the regression. Also other (demographic) factors are included that may influence the search process of students. This includes *age*, *search intensity*, having *financial support* from parents, finding housing *downtown*, *education institute*, *years before completion of education* and, having a *job*. The determination of these variables are briefly explained in Table 2. The influence of the different factors is being tested with the use of the following equation model:

$$y_i = \beta_i + \beta_{i1} * x_{i1} + \beta_{i2} * x_{i2} + \beta_{i3} * x_{i3} + \beta_{i4} * x_{i4} + \beta_{i5} * x_{i5} + \beta_{i6} * x_{i6} + \beta_{i7} * x_{i7} + \beta_{i8} * x_{i8} + \beta_{i9} * x_{i9} + \beta_{i10} * x_{i10} + \beta_{i11} * x_{i11} + \beta_{i12} * x_{i12} + \beta_{i13} * x_{i13} + \epsilon_i$$

y_i = Duration of search in weeks

β = Parameter

β_{i1} = Age

β_{i2} = Job

β_{i3} = Financial support

β_{i4} = Region Groningen – Assen

β_{i5} = Independent housing

β_{i6} = Downtown

β_{i7} = Use of a broker

β_{i8} = Number of inspections

β_{i9} = Previous living situation (experience)

β_{i10} = Rent of current housing

β_{i11} = Maximum budget

β_{i12} = Years before completion of education

β_{i13} = Education institution

ϵ_i = Error term

The dependent variable y_i stands for the duration of the search for housing in weeks. In the first regression zero search time or no search time is included in addition to a longer search time. In the second regression those cases were excluded and the variables therefore only include cases with at least a search duration of one week.

4.3 Logistic regression

In addition to the two linear regressions a logit is used to determine the odds of finding housing in the next unit of time. Using a logistic regression makes it possible to estimate the odds in the following way. A sequence of risk sets is created, where each set includes students still at risk of finding housing. The dataset is extended and binomial time variables (0 = still looking for housing, 1 = found housing in in that given time period). The data is coming from the question “For how long have you searched for your current house (in weeks)?”. For the use of the logistic regression the answers on this question were categorized in different categories: zero weeks (t_0), one week (t_1), two weeks (t_2), three weeks (t_3), four weeks (t_4), and five weeks or more (t_5). T_0 was given number 1 in the first row whereas t_5 was given number 1 in the sixth row. Additionally the variable *moved* was created. This variable influenced how many cases each respondent got. A respondent who reported zero search time got only one case and a respondent with 4 weeks of search time got 5 cases (Ryu, 1994). In addition to these variables the previously used variables of the linear regression were also included in the test.

A logistic density function implies that if $P_i = \text{Probability}(\text{Finding new housing } X, H_i = 0, H_j = 1, i \neq j)$, then, $\frac{P_i}{1-P_i} = \exp(-X\beta + H_i \alpha_i)$. The independent variable is X , and α_i and β are coefficients to be estimated. Anglin (1997) describes the created odds ratio as the most natural counterpart to a hazard function. Since the length of a stage were h units, and when the instantaneous hazard rate were λ_i then, as h approaches 0, the odds ratio will approach $\lambda_i h$. A logistic specification has the advantage that the results can, in certain cases, be interpreted as a special case of the proportional hazard specification, which is commonly used in estimating duration models (Jenkins, 2004). An increase in X has no effect on $\frac{P_i/(1-P_i)}{P_j/(1-P_j)}$ the relative odds of finding housing during stage i compared to stage j . The use of the logit model with discrete stages simplifies one aspect of the estimation of search time (Anglin, 1997). The theory of chapter 2 hypothesizes that elapsed time should interact with some of the repressors in X .

5. Data

This chapter will start with data of Kences (2016) on the student housing situation in the Netherlands and Groningen. This is followed by survey results on search duration of students in Groningen and the self-proclaimed factors affecting the search duration given by the respondents.

5.1 Student population and student housing in the Netherlands and Groningen

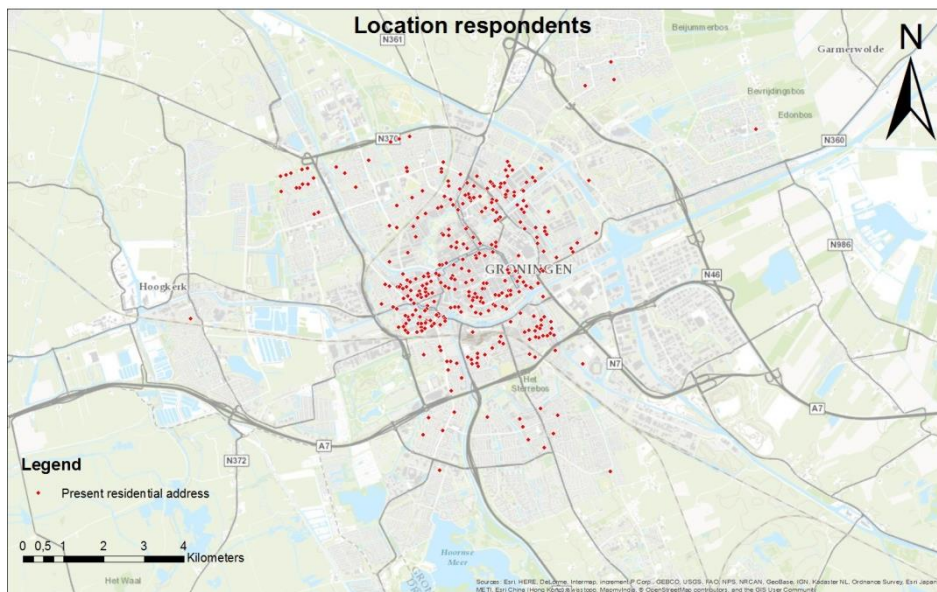
The student population of the Netherlands can be separated into two categories, students enrolled in research universities and student enrolled in universities of applied sciences. The total number of students enrolled in higher education in the academic year 2015-2016 was 649.000. Of which 396.000 were enrolled in universities of applied sciences and 253.000 where enrolled in research universities (Kences, 2016). Table 3 shows that student attending research universities are more likely to live outside the parental home than students enrolled in universities of applied sciences. Out of the 649.000 students enrolled in higher education a total of 364.000 students live outside their parental home of which 64% lives in the same city as their education institute is located (Kences, 2016).

Table 3. Living situation of students in the Netherlands (Source: Kences, 2016)

	<i>Living in parental home</i>	<i>Living outside the parental home</i>	<i>Room with shared facilities</i>	<i>One room housing</i>	<i>Independent housing</i>
Students	285.000	364.000	203.000	66.000	95.000
Universities of applied sciences	218.000	178.000	90.000	33.000	57.000
Research Universities	67.000	186.000	114.000	33.000	38.000
Average Age	20y 10m	23y 2m	22y 4m	23y 7m	24y 7m
% within city of education	14%	68%	79%	72%	43%
% Social Housing corporation	-	43%	36%	61%	48%
Average square floor space	-	-	17m2	25m2	68m2
Average Price (€)	-	€480,-	€360,-	€490,-	€710,-

In a scenario used by Kences (2015) the number of students living independent from their parents will decrease with 15% in the city of Groningen as a result of the new student loan system. The overall number of first year's students that have left the parental home to live on their own has already decreased since the implementation of the new student loan system. The percentage of first year's students in the Netherlands

living outside the parental home decreased from 28% in 2014-2015 to 13% in 2016-2016 (Kences, 2016). Nevertheless the city of Groningen is as of august 2016 inhabited by a total number of 35.699 students of which 16.222 are enrolled in Universities of applied sciences and 19.477 are enrolled in a research university (Central Bureau for Statistics, 2016). These students are concentrated around the historic city center. According to Statistiek en Onderzoek Groningen (Statistics and Research Groningen) (2014) the concentration of young people rose considerably from 1995 to 2013, with the downtown “Centrum” neighborhood having a population of 61% between the age of 18 and 29 years old in 2013. The distribution of the respondents is shown in Map 2. This shows that the sample corresponds in terms of geographic distribution with the population as most respondents are concentrated in the city center and adjacent areas.



Map 2. Distribution of survey respondents within the city of Groningen.

5.2 Search duration of students in Groningen.

Students in the Dutch city were asked about the duration of their search for housing in weeks. The categorized results are shown in Table 4 (full results appendix VI). Almost 40% percent of students asked stated that they did not experience any active search time. The other 60% did experience an active search process of at least one week, ranging from only 1 week to as much as 200 weeks. The 200 weeks search is was a clear outlier and along with some other outliers these have been removed (Appendix II). The average search time of all respondents is 3.01 weeks with a standard error of 0.30. If only students who reported search time are included the average search time was 5.03 with a standard error of 0.45. The high percentage of students who have indicated in that they did not experience an active search time can be a possible measurement error. As literature states that a process of search is essential in the allocation of

goods (Cheung, 1974; Barzel, 1974). The true value of search duration is therefore potentially biased. And the outcome of the linear regression on search duration is as already described in the chapter of methodology therefore potentially less efficient (Bound et al., 2001). Although respondents who have indicated that they experienced no search time cannot be seen as false statements. As a very high share of respondents with no active search (83.1%) found their present home with the help of social media, friends or websites like kamernet.nl. In theory it is possible that those students were not looking for new housing and that information about the availability of their present house came on their path accidentally. And hence making it possible for them to find housing without a process of active search. Further qualitative research could further examine the aspect of zero search time for students.

Most respondents (70.6%) found their present home with the help of social media, friends or websites like kamernet.nl (Dutch online platform for student rooms). The remainder found their home due to the help of a realtor (16.5%), a social housing authority (8.7%) or other (4.2%). When students with no active search period and students with an active search period are distinguished as two separate groups this distribution changes modestly. As stated 83.1% of non-active students found their present home with the help of social media, friends or websites as kamernet.nl. This is a much higher percentage than students who actively searched for their present home (62.0%). A slight majority of 54.0% of respondents stated that they did not change their demands during their search process, 26.2% of students lowered their demands whereas 8.2% increased their demands. And 7.1% of students increased their budget to meet their demands.

Table 4. Search time for housing in weeks (N=413)

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
0 weeks	163	39.47	39.47
1 week	55	13.32	52.78
2 weeks	48	11.62	64.41
3 weeks	40	9.69	74.09
4 weeks	36	8.72	82.81
5 weeks or more	71	17.19	100.00

5.3 Descriptive statistics regression variables

The descriptive statistics of the variables used in both of the regressions are shown in table 5. While it is not right to take the average of an ordinal variable the mean is shown to give an indication of the distribution of those variables.

Table 5. Descriptive statistics of variables used in the model (N=413)

	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Duration in weeks	2.98	5.87	0	70
Age	22.29	2.34	17	35
Job (1=having a job)	0.63	.48	0	1
Financial support from family (1=financial support)	0.72	.45	0	1
Region Groningen-Assen (1=from region Groningen- Assen)	0.17	.38	0	1
Living in independent housing (1=living in independent housing)	0.22	.43	0	1
Downtown (1=downtown)	0.25	.42	0	1
Use of a broker (1=broker)	.17	.37	0	1
Number of inspections	2.12	1.70	1	11
Experience (1=experienced searcher)	.57	.50	0	1
Rent present house	€380.74	€117.68	€160.00	€100.00
Maximum budget ³	2.28	1.33	0	5
Years before completion ⁴	1.11	.81	0	2
Education Institution (0=University of Groningen 1=Hanze 2=other)	0.23	.52	0	2

5.4 Results self-proclaimed reasons affecting search duration

Respondents were asked to what extent different factors affected the duration of their search process. The data shown in Table 6 contains data from attitudinal questions. They were able to choose six options from of low influence to of high influence and additionally the option non-applicable. Table 6 show the results of the mean, standard deviation and the percentage of respondents per search time influence category. Students were able to choose in a scale of 1 to 5 and an additional not applicable option on how much a factor affected their search time. For the sake of this table the *low influence* and *high influence* categories are the outcome of a merged variable of low and very low and high and very high respectively. The mean is calculated with the option not applicable being 0 and of very low influence to of very high influence

³ Dummy variable with 0=250-300 1=300-350 2=350-400 3=400-450 4=450-500 5=500+

⁴ Dummy variable with 0=one year or shorter 1=one to two years 2=longer than two years

scaled from 1 to 5 respectively. The validity of these outcomes is influenced by the attitudinal nature of the self-proclaimed factors which are discussed in chapter 4.1 (Tourangeau et al., 2000).

Table 6. Self-proclaimed factors affecting the duration of search time (N=413)*.

	<i>Mean</i>	<i>SD</i>	<i>Of low influence</i>	<i>Of Average influence</i>	<i>Of high influence</i>	<i>Not applicable</i>
Availability of housing	2.95	1.44	21,79%	26,63%	41,65%	9,93%
Quality of available housing	3.11	1.46	16,47%	20,34%	52,78%	10,41%
Price of available housing	3.04	1.47	18,64%	25,42%	45,77%	10,17%
Prioritization search of housing	2.09	1.41	43,10%	21,31%	19,13%	16,46%
Rejection present residents	1.67	1.45	48,18%	12,59%	14,53%	24,70%
Financial reasons	2.37	1.39	36,56%	25,42%	24,70%	13,32%
Location preferences of housing	2.52	1.51	36,32%	20,10%	30,75%	12,83%
Study reasons	1.74	1.23	58,35%	15,50%	10,17%	15,98%
Other not stated reasons	1.12	1.62	19,61%	10,17%	12,59%	57,63%

None of the variables of self-proclaimed factors affecting the duration of search time has an overwhelmingly high influence on the search time of all respondents. Nevertheless a substantial percentage of respondents do call three variables influence of the quality of the available housing, the quality of housing and the price of housing were the highest ranking factors. Availability of housing and quality of available housing were also found to have an influence on students housing search by both Kences (2016) and the municipality of Groningen (2015). Also the price of housing is for many students of high influence on their search duration. Figure 3 shows the density distribution of the monthly rent paid by the respondents. The median rent is €381, while the medium maximum amount of rent a respondent is willing to pay for a room is €421. Notwithstanding of the positive difference between those two amounts

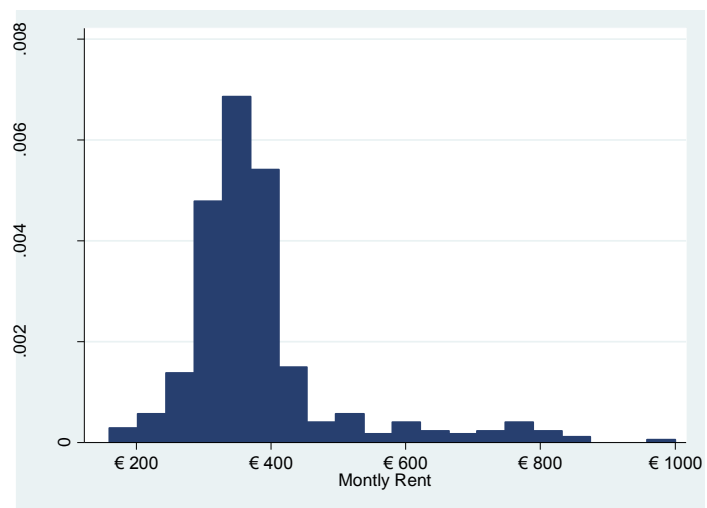


Figure 3. Density graph of monthly rent paid by respondents per month in euros.

the price of the available housing is the second most influential aspect influencing search time according to the respondents.

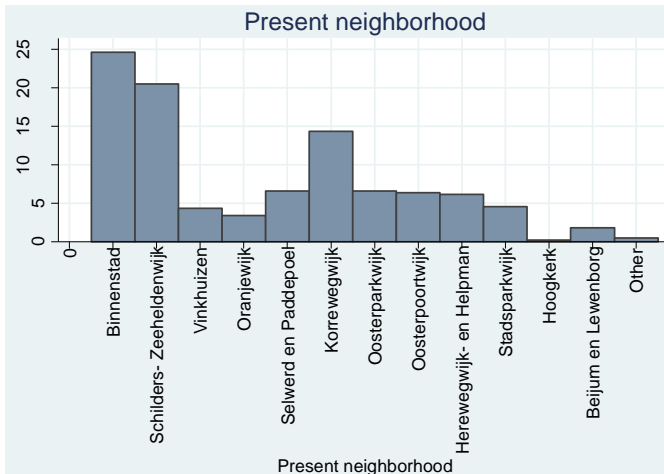


Figure 4. Present neighborhood of respondents

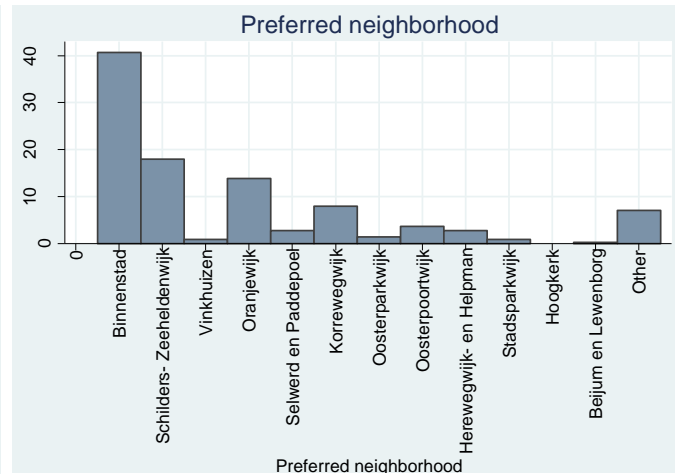


Figure 5. Preferred neighborhood of respondents

Other factors were of less importance for either a plurality or majority of the students. The lowest impact on search duration (apart from other options) according to the respondents are prioritization, rejection and study reasons. All of them could have logical explanation as students often already live somewhere most of them will not have a very high priority to move. Also the rejection of possible housemates is low, this as many houses do not have an allocation mechanism based on acceptance or rejection by its housemates.

Locational preferences show an inconclusive image with a slight plurality of respondents calling it of little influence on their search duration. The most popular neighborhood among the respondents was the “Binnenstad”. This downtown area is the most popular neighborhood for more than 40% of the respondents (Figure 4). Although only 24% of the respondents live in this neighborhood at present (Figure 5). Despite a plurality of students prefer the “Binnenstad” neighborhood there is no significant difference in search duration found between those who found an accommodation in the “Binnenstad” and students who found an accommodation elsewhere (Appendix IV).

6. Results

This chapter consists of the results of the regression analyses. First the outcomes of the linear regressions are shown and analyzed and secondly the results of the logistic regressions are discussed. The linear regression consists of two linear regressions, one with all the respondents and the second one only with respondents who experienced a search duration of at least one week, and therefore active seekers. The second part of this chapter consists of two logistic regressions where the results of the probability of finding housing are discussed.

6.1 Regressions of search duration

Table 7 shows the results of two linear regressions with active search for housing in weeks as dependent variable. All respondents were asked about the duration of their active search process for their present house. As already discussed, many students did not experience any search time in weeks (see Table 5), therefore two regressions were performed. The first regression in Model 1 includes students who did not experience any search time (zero weeks) and students who did experience search time. Model 2 excludes students with no search time and therefore only includes respondents who have indicated that they experienced at least one week of search time. Both models are shown in Table 7. This table shows the regression coefficient of different variables and the t-values of those variables. Model 1 includes 413 respondents and Model 2 does include 252 observations. Model 1 has an explained variance (R^2) of 0.13 and model 2 has an explained variance of 0.18. This is a relatively low level of explanation but comparable with the study on search duration of Anglin (1997). The P-values of both models were 0.00, hence the null hypotheses can be rejected.

The results of both the regression show that many of the included variables do not have a significant impact on the search duration of the respondents. The significant variables are so in different levels, the table shows 10%(*), 5%(**) and 1%(***) significance levels of the variables. This model gives an answer on the question to what extent the used factors influence search time of students in Groningen. Students who found independent housing had a significantly higher search duration in both Model 1 as well as Model 2. This could be the result of the higher preference, and therefore scarcity, of students to live in independent housing (45% of all students want to live in independent housing according to Kences, 2015). Rent also has an influence on search duration although Model 1 (10%) has a lower level of significance than Model 2 (1%). Students who found housing with lower rent have a longer search time than those who found more expensive housing. A student who found housing which costs €100 more will have about 1 week less search time than those who found housing €100 cheaper. This is in contrast to buyer search where housing with a higher asking price was found to have a higher search duration (Stigler, 196 and Yavas, 1992). A hypothetical explanation for this could be the attitude towards housing of students. As

students have limited resources they need to search longer before finding housing which is affordable for them, although further research should lead to better understanding of this assumption. Financial support from family lead to higher search duration (on 10% significance level).

Model 1 show a positive significant result at the 1% significance level for the number of inspections, a logical and straightforward explanation is that it simply takes time to inspect numerous houses. Anglin (1997) The use of a broker is positively affecting search duration in Model 1. This is notable as theory suggests that brokers help to make the search process easier and reduce the search time for their clients (Elder et al., 2000). It must be noted however that Model 2 shows no significant effect of the use of a broker and the data shows that only 3 people who used a broker searched for zero weeks. The high number of zero week respondents in Model 1 is thus influencing the results of the regression coefficient. A similar pattern is seen for the number of inspections. Respondents that have used a broker or inspected numerous houses in their search for new housing could be more likely to experience the time doing so as an active search process than someone who is just open to the idea of moving. This is related to the concept of search for housing. As the matching process in housing is not continuous, but rather dichotomous: matched or mismatched. Student can have matching housing until they find housing that they find to be better matching (Wheaton, 1990).

Both Model 1 as well as Model 2 show no significant difference in terms maximum budget, years till completion, age or education institution. Based on these variables it can be concluded that no inequality in the duration of search between groups based on these variables.

Table 7. Linear Regression models search duration in weeks.

		<i>Model 1 (N=413)</i>		<i>Model 2 (N=250)</i>	
		Coefficient	t-value	Coefficient	t-value
Constant		-0.27	-0.08	-3.38	-0.53
Age (in years)		0.10	0.67	0.34	1.22
(part-time) Job		0.06	0.09	0.12	0.11
Financial support family		1.11*	1.75	1.86**	1.98
From Region Groningen		0.10	0.12	0.92	-0.15
Independent housing		3.02**	2.45	5.45***	3.02
Downtown		-0.16	-0.24	-0.16	-0.15
Use of a broker/realtor		1.98**	2.11	0.07	0.06
Number of inspections		0.66***	2.92	0.47*	1.81
Experience		-0.69	-1.04	-0.32	-0.31
Rent (in €)		-0.01*	-1.79	-0.01***	-2.75
Maximum budget	€300->€350	-0.16	-0.14	0.14	-0.09
	€351->€400	-0.64	-0.57	-0.68	-0.45
	€401->450	10.06	0.68	2.46	1.02
	€451->500	-0.15	-0.10	0.40	0.36
	€501 or more	1.30	0.52	3.09	0.90
Years to study	1 to 2 years	1.24	1.38	2.15	1.57
	> 2 years	0.43	0.57	1.39	1.11
Education institution	Hanze	0.91	1.22	1.58	1.52
	Other	0.85	0.70	1.64	1.03
		R-squared = 0.13		R-squared = 0.18	

*Note: Model 1: N = 413. Model 2: N=250. Coef. stands for regression coefficient. *10% significant **5% significant ***1% significant*

6.2 Logistic regression of search duration

An interesting question regarding search duration is whether a student finds a new house in the next period of time. Table 8 shows the logistic regression on explaining time-till-found. Model 3 shows the outcome of the logistic regression based on all respondents, while Model 4 is only based on those respondents who stated that they had an active search process. With the use of a logistic regression the odds of finding housing can be estimated. The dependent variable is finding housing in the first period of time, zero weeks. The range of the time frame is between zero weeks and five weeks or more. The pseudo R-squared, a simple summary of goodness of fit, of Model 3 is 0.07 and the test has a log-likelihood ratio of -708.66. Model 4 has a pseudo R-squared of 0.02 and a log-likelihood ratio of -558.06. The pseudo R-squared is of this logistic regression is low and much lower than the pseudo R-squared in the comparable logistic regression on time-till-purchase of Anglin (1997) (Pseudo R-squared of 0.26).

There are significant (at the 1% level) decreases in the odds of finding housing in the time periods after zero weeks when cases with zero search time are included. Variables $t1$, $t2$, $t3$ and, $t4$ all have significant negative coefficients in Model 3. Model 3 therefore implies that the odds of finding housing are lower in the time periods compared to finding housing with no or zero search duration. In Model 4 however, those variables are positive although only $t4$ shows a significant effect. This implies that, compared to those who seek for 1 week, they are 1.89 times more likely to find their house in $t4$. Having a *job* decreases the odds of finding housing with 0.13 compared to those without a job, although this effect is only significant at the 10% level. Having found *independent housing* however, does show a decrease in the odds of finding housing. Model 3 shows this effect at 10% significance level, whereas Model 4 show an even higher decrease at 1% significance level (odds decrease with 0.31). It is possible that the higher demand for independent housing influences the decrease in odds that is found.

Anglin (1994) stated that as house seekers have higher search duration this should be closely related to the number of houses visited as the previously visited houses were deemed unacceptable to the seeker. This hypothesis holds as both Model 3 as well as Model 4 show a decrease in odds when the *number of inspections* increase. Specific student groups based on age, region, education institution, budget or years till graduation do not show any significant effect in odds.

Table 8. Logistic regression explaining search time in odds ratio

Independent variable	<i>Model 3 (N=413)</i>		<i>Model 4 (N=250)</i>		
	Coefficient	Z-value	Coefficient	Z-value	
t1 (1 week)	-1.19***	-6.47	-	-	
t2 (2 weeks)	-0.99***	-5.02	0.17	0.86	
t3 (3 weeks)	-0.78***	-3.53	0.34	1.51	
t4 (4 weeks)	-0.44*	-1.77	0.67***	2.63	
Constant	-0.65	-0.88	-1.05*	-1.87	
Age (in years)	0.04	1.50	0.01	0.32	
Job	-0.11	-1.08	-0.14*	-1.81	
Financial support family	-0.07	-0.61	-0.11	-1.31	
Region Groningen-Assen	0.12	0.90	-0.07	-0.91	
Downtown	0.07	0.63	0.09	0.95	
Independent housing	-0.26*	-1.72	-0.37***	-3.98	
Use of a broker/realtor	-0.48***	-4.48	-0.06	-0.71	
Number of inspections	-0.13***	-5.39	-0.45**	-2.56	
Experience	0.15	1.47	-0.03	-0.45	
Rent (in €)	-0.00	-0.35	0.00	0.58	
Maximum budget	€300->€350	0.11	0.44	0.01	0.05
	€351->€400	0.20	0.84	0.05	0.25
	€401->450	0.13	0.48	-0.03	-0.16
	€451->500	0.14	0.46	-0.01	-0.03
	€501 or more	0.09	0.25	-0.12	-0.50
Years to study	1 to 2 years	-0.03	-0.20	-0.08	-0.89
	more than 2 years	0.10	0.69	-0.05	-0.47
Education institute	Hanze University of Applied Sciences	-0.13	-0.94	-0.13	-1.22
	Other	-0.13	-0.54	-0.12	-0.80
Observations		413		250	
Log Likelihood		-708.68		-558.06	
Pseudo R-square		0.07		0.02	

*Note: Model 1: N = 413 clusters on respondents (total number of observations: 1182). Model 2: N=250 clusters on respondents (total number of observations: 1019) *10% significant **5% significant ***1% significant.*

7. Conclusion and discussion

This thesis investigates the determinants of queue and search time in the student housing market and the effect that these factors have on search duration in the student housing submarket. No other research on search duration of student housing seekers has been done. The survey results on search for housing of students in the Dutch city of Groningen give information about the process of search for this particular group. A large minority of students did not experience any search time, whereas 60% did. A linear and logistic regression concluded that many variables had no significant influence on search or on the odds of finding housing.

The student housing market has grown into an independent submarket in many western countries (Hochstenbach and Boterman, 2014). As students typically start their own housing pathway during their student years they also experience the process of search for housing for the first time. A typical student housing pathway could therefore be distinguished (Ford et al., 2002). Before students acquire housing, a process of search precedes (Cheung, 1974). Typical search theory assumes that there are opportunities distributed that are waiting for a potential buyer or renter (Anglin, 1997). As the housing market is an imperfect market allocation mechanisms are needed. Different housing allocation mechanisms are used by students as they search for different types of housing and that housing is owned by different types of landlords.

This thesis found that a large minority of students have experienced no or zero weeks search time before they acquired their current housing. This is in contradiction to general search theory (Cheung, 1974). It is possible that many students did not experience search time before acquiring housing as they just popped in to their present home. Another explanation for this could be the unfamiliarity with search theory of respondents, as they might not recognize their search time as such. Ideally this would have been overcome by giving the respondents some knowledge about search theory, but this would make the survey too extensive and complex. Also the ability of the respondents to fill in the right number of weeks search duration can be questionable, since some seek for such an amount of weeks that they fail to distinguish between 10 and 12 weeks (Anglin, 1997). It is therefore important to read the results with great care. The most important self-proclaimed factors affecting search time were the availability of housing with adequate quality, the price of housing, and the availability of housing. The process of search of students is affected by the lack of affordable housing with adequate quality, and although the shortage of student housing is over its peak still many students experience shortage on the student housing market. However in contrast to the high popularity of the downtown, locational preferences were found to be of less importance to students.

Several factors were thought to have an effect on search duration, but many did not show a significant effect on the search duration of students in Groningen. Brown and Moore (1970) have argued that knowledge of the local market helped in the search process for housing. This research however, did not find a significant difference between students who left the parental home, and hence started their own housing pathway, and students who already lived outside their parental home. Students from the *region Groningen-Assen* were neither found to have an advantage in the search process. Although Hochstenbach and Boterman (2014) found such an advantage for students in Amsterdam, Kohn and Shavell (1974) suggested no difference between these groups as seekers would compensate their lack of knowledge with a higher intensity. The search for *independent housing* however, lead to a longer search process compared to students that found non-independent housing. For *rent* it was also found that students who found more expensive housing experienced a shorter search time than students who found cheaper housing. This effect is even more profound when only students who did experience search time are included (significant on the 1% level). So where Stigler (1961) and Yavas (1992) found that buyers search intensity is higher for houses with a higher asking price, students seem to experience the opposite, as a higher rent leads to a shorter active search. Financial support on the other hand showed effect as students with *financial support* from family had experienced a longer active search than those that do not get financial support from family. Although this effect was less powerful. The use of a *broker* and the *number of inspections* did show a (powerful) positive effect on search duration but only when zero search time is included. The outcomes of these variables therefore need have to be interpreted with great caution as students with no active search typically do not use a broker or inspect houses before acquiring housing. The insignificant effect of the use of broker by active searchers is remarkable as theory suggest that brokers effectively reduce the search time for their clients (Elder et al., 2000). In terms of equality in the search process no significant differences were found between different student groups based on region, age, education institutions, time till graduation or maximum budget. Also experience did not seem to have an effect, which is in contrast to Jud and Winkler (1994) who stated that unexperienced buyers use extra time to offset for the lack of information.

It can be concluded that the concept of moving and search time for students is a complex phenomenon. Not all students seem to experience active search time and differences in both the length as well as the self-experienced influences on the duration of search time occur. A recommendation for future research is to cooperate with local authorities, as this makes it possible to ask students about their search process just after they moved into their new house. This would make the data on search duration more reliable, and conclusions more efficient. Additionally it would be interesting to do likewise research in other Dutch cities and see if cities with “notorious” housing markets, as for instance Amsterdam, show other results.

8. Literature

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9. Appendices

9.1 Appendix I Survey used (in Dutch)

Enquête Studentenhuisvesting

Yaniek Schuring & Jan-Aike Noordermeer

Beste student,

Jij bent hierbij uitgenodigd om deze enquête in te vullen. De doelgroep van deze enquête zijn studenten die in Groningen wonen. Deze enquête wordt verspreid in het kader van twee afstudeerprojecten aan de Rijksuniversiteit Groningen en heeft als doel om een beter beeld te krijgen van de kamerwaardering en de tijd die het kost om een kamer te vinden in Groningen. Door middel van de resultaten van het onderzoek kan er een beter gemeentelijk kamerbeleid gevormd worden, waarbij de huidige tevredenheid en verwachtingen van de studenten meegenomen worden. Als gevolg zullen kamerverhuurders in de nabije jaren beter kunnen inspelen op de wensen van studenten waardoor de tevredenheid van studenten over woonruimtes zal toenemen.

Om dit onderzoek uit te voeren vragen wij ongeveer 10 minuten van jouw tijd om deze vragenlijst in te vullen. We vragen jullie deze lijst zo compleet mogelijk in te vullen. De enquête is volledig anoniem en wordt enkel gebruikt voor onderzoeksdoeleinden.

Met het invullen van deze enquête maak je kans om een van de beschikbare bioscoopbonnen te winnen.

Mocht je verder nog vragen hebben dan kun je contact opnemen met y.m.schuring@student.rug.nl of j.a.noordermeer@student.rug.nl.

Met vriendelijke groet,

Yaniek Schuring en Jan-Aike Noordermeer

1 Vragen over de huidige woning

De volgende vragen gaan over je huidige woonsituatie.

1.1 Hoe is op dit moment je woonsituatie? (aankruisen wat van toepassing is)

- Ik huur een kamer in een studentenhuis van een particuliere verhuurder
- Ik huur een kamer in een studentenhuis van een woningcorporatie
- Ik huur een kamer in een verenigingshuis

- Ik huur een appartement/studio samen met mijn vriend/vriendin
- Ik huur zelf een appartement/studio
- Ik huur een kamer bij een vriend/bekende die eigenaar van de woning is
- Ik heb een eigen woning gekocht
- Ik woon nog bij mijn ouders/verzorgers (**ENQUETE NIET VERDER INVULLEN**)
- Anders nl;

1.2 Hoe tevreden ben je met je huidige woonsituatie? (*Omcirkelen wat van toepassing is*)

Zeer ontevreden - Ontevreden - Neutraal - Tevreden - Zeer tevreden

1.3 Kun je aangeven hoe tevreden je bent met de volgende onderdelen in je huidige woning?

(1 = zeer ontevreden, 5 = zeer tevreden, aankruisen wat van toepassing is)

1.3 Stelling	1	2	3	4	5	NV T
1.3.1 De staat van het huis (binnenkant)						
1.3.2 De staat van het huis (buitenkant)						
1.3.3 Je huisgenoten						
1.3.4 De band met je huisgenoten						
1.3.5 De locatie van het huis						
1.3.6 De afstand om gebruik te maken van het OV						
1.3.7 De afstand tot de studiefaciliteiten						
1.3.8 De afstand van de binnenstad						

1.3.9 Je huidige (eigen) woonoppervlakte in huis					
1.3.10 De algemene voorzieningen zoals toilet, keuken & douche.					
1.3.11 De kwaliteit van de buurt/omgeving					
1.3.12 De prijs van de woonruimte					

1.4 De prijs (inclusief bijkomende kosten zoals gas/water/licht/internet) die ik maandelijks betaal is:

€

1.5 Het aantal vierkante meters van mijn eigen woonruimte is ongeveer:

m²

1.6 Het totaal aantal bewoners op mijn adres is:

1.7 Kun je aangeven welke van de volgende voorzieningen in het huis aanwezig zijn?

1.7 Voorziening	Ja	Nee
1.7.1 Gemeenschappelijke woonkamer		
1.7.2 Gemeenschappelijke buitenruimte (tuin/balkon)		
1.7.3 Gemeenschappelijke keuken		
1.7.4 Gemeenschappelijke fietsenstalling/schuurtje		
	Ja	Nee
1.7.5 Eigen keuken		
1.7.6 Eigen toilet		
1.7.7 Eigen douche		

1.8 Hoe lang heb je gezocht naar je huidige woning (in weken)?

- Ik was niet actief op zoek

1.9 Hoe heb je je huidige woning gevonden?

- Via een kamerbemiddelingsbureau of makelaar
- Via social media, kennissen, vrienden, familie of websites zoals kamernet.
- Via een woningcorporatie
- Anders nl;

1.10 Hoeveel woningen heb je bezocht voor het vinden van je huidige woning?

1.11 Hoeveel woningen heb je **zelf** afgewezen voor het vinden van je huidige woning?

2 Vragen over vorige woning

De volgende vragen gaan over je vorige woning. Probeer deze zo correct mogelijk in te vullen. Mocht je enkele gegevens niet meer weten probeer dan zo juist mogelijk te schatten.

2.1 Hoe was op dat moment je woonsituatie?

- Ik huurde een kamer in een studentenhuis van een particuliere verhuurder
- Ik huurde een kamer in een studentenhuis van een woningcorporatie
- Ik huurde een kamer in een verenigingshuis
- Ik huurde een appartement/studio samen met mijn vriend/vriendin
- Ik huurde zelf een appartement/studio
- Ik huurde een kamer bij een vriend/bekende die eigenaar van de woning is
- Ik had een eigen woning gekocht

- Ik woonde nog bij mijn ouders/verzorgers

BIJ DIT ANTWOORD: GA DOOR NAAR

SECTIE 3

- Anders nl;

2.2 Hoe tevreden was je met de vorige woonsituatie? (*Omcirkelen wat van toepassing is*)

Zeer ontevreden - Ontevreden - Neutraal - Tevreden - Zeer tevreden

2.3 Kun je aangeven hoe tevreden je was met de volgende onderdelen in je vorige woning?

(1 = zeer ontevreden, 5 = zeer tevreden, aankruisen wat van toepassing is)

2.3 Stelling	1	2	3	4	5	NVT/ Weet niet
2.3.1 De staat van het huis (binnenkant)						
2.3.2 De staat van het huis (buitenkant)						
2.3.3 Je huisgenoten						
2.3.4 De band met je huisgenoten						
2.3.5 De locatie van het huis						
2.3.6 De afstand om gebruik te maken van het OV						
2.3.7 De afstand tot de studiefaciliteiten						
2.3.8 De afstand van de binnenstad						
2.3.9 Je (eigen) woonoppervlakte in huis						
2.3.10 De algemene voorzieningen zoals toilet, keuken & douche.						

2.3.11 De kwaliteit van de buurt/omgeving					
2.3.12 De prijs van de woonruimte					

2.4 Hoe vaak ben je verhuisd sinds het verlaten van het ouderlijk huis? (*Verhuizing vanuit ouderlijk huis meegeteld*)

2.5 In welke buurt stond je vorige woning? (*Omcirkelen wat van toepassing is, voor buurtindeling zie bijlage*)

1. Binnenstad
2. Schilders- en Zeeheldenwijk
3. Vinkhuizen
4. Oranjewijk
5. Selwerd en Paddepoel
6. Korrewegwijk
7. Oosterparkwijk
8. Oosterpoortwijk
9. Herewegwijk en Helpman
10. Stadsparkwijk
11. Hoogkerk
12. Beijum en Lewenborg
13. Anders (bijvoorbeeld door ouderlijk huis)

2.6 Postcode vorige woning (1234AB)?

2.7 De prijs (inclusief bijkomende kosten zoals gas/water/licht/internet) die ik maandelijks betaalde was:

2.8 Het aantal vierkante meters van mijn eigen woonruimte was ongeveer:

m2

2.9 Het totaal aantal bewoners op het adres was:

2.10 Kun je aangeven welke van de volgende voorzieningen in het huis aanwezig waren?

2.10 Voorziening	Ja	Nee
2.10.1 Gemeenschappelijke woonkamer		
2.10.2 Gemeenschappelijke buitenruimte (tuin/balkon)		
2.10.3 Gemeenschappelijke keuken		
2.10.4 Gemeenschappelijke fietsenstalling/schuurtje		
2.10.6 Eigen keuken		
2.10.7 Eigen toilet		
2.10.8 Eigen douche		

2.11 Hoe heb je je vorige woning gevonden?

- Via een kamerbemiddelingsbureau of makelaar
- Via social media, kennissen, vrienden, familie of websites zoals kamernet
- Via een woningcorporatie
- Anders nl;

2.12 Hoe lang heb je ongeveer gezocht naar je vorige woning (in weken)?

- Ik was niet actief op zoek

3 Woonwensen

De volgende vragen gaan over wat jij belangrijk vindt bij een woning tijdens de studieperiode.

3.1 Kun je aangeven in hoeverre je de volgende karakteristieken belangrijk vindt **gegeven je huidige budget?**

(1 = zeer onbelangrijk, 5 = zeer belangrijk)

3.1 Stelling	1	2	3	4	5
3.1.1 De staat van het huis (binnenkant)					
3.1.2 De staat van het huis (buitenkant)					
3.1.3 Leuke huisgenoten					
3.1.4 Een goede band met huisgenoten					
3.1.5 Regelmatig afspreken met huisgenoten					
3.1.6 De locatie van het huis					
3.1.7 De afstand om gebruik te kunnen maken van het OV					
3.1.8 Afstand van studiefaciliteiten					
3.1.9 Afstand van de binnenstad					
3.1.10 De kwaliteit van de algemene voorzieningen (douche, keuken, toilet)					
3.1.11 De kwaliteit van de buurt/omgeving					
3.1.12 De prijs van de woonruimte					
3.1.13 Minimale oppervlakte woonruimte					
3.1.14 Zelfstandig wonen (zonder huisgenoten)					

3.2 **Gegeven je huidige budget**, hoeveel aantal vierkante meters meer van jouw eigen woonruimte zou je graag willen hebben?

m2

3.3 **Gegeven je huidige budget**, hoeveel aantal vierkante meters eigen woonruimte zou je op z'n minst willen hebben om een woning/kamer in overweging te nemen?

m2

3.4 Kun je aangeven welke van de volgende voorzieningen je zou prefereren **gegeven je huidige budget**?

3.4 Voorziening	Ja	Nee
3.4.1 Gemeenschappelijke woonkamer		
3.4.2 Gemeenschappelijke buitenruimte (tuin/balkon)		
3.4.3 Gemeenschappelijke keuken		
3.4.4 Gemeenschappelijke fietsenstalling/schuurtje		
3.4.6 Eigen keuken		
3.4.7 Eigen toilet		
3.4.8 Eigen douche		

3.5 In welke buurt zou je graag willen wonen? (*één keuzemogelijkheid omcirkelen, voor buurtindeling zie bijlage*)

1. Binnenstad
2. Schilders- en Zeeheldenwijk
3. Vinkhuizen
4. Oranjewijk

5. Selwerd en Paddepoel
6. Korrewegwijk
7. Oosterparkwijk
8. Oosterpoortwijk
9. Herewegwijk en Helpman
10. Stadsparkwijk
11. Hoogkerk
12. Beijum en Lewenborg
13. Geen voorkeur

3.6 Wat zou je maandelijks maximaal kunnen uitgeven aan jouw ideale woning? (*inclusief bijkomende kosten zoals gas/water/licht/internet*)

€

4. Oorzaken duur zoektocht woonruimte

De volgende vragen gaan over de tijdsduur en de zoektocht naar een woonruimte.

4.1 Geef van de volgende oorzaken aan hoe groot de invloed was op de lengte van de zoektocht naar je huidige woonruimte.

	Ze er klein	Klein	Gemiddeld	Groot	Ze er groot	Nvt.
4.1.1 Beschikbaarheid woonruimte algemeen						
4.1.2 Kwaliteit beschikbare woonruimte						
	Ze er klein	Klein	Gemiddeld	Groot	Ze er groot	Nvt.
4.1.2 Prijs van de beschikbare woonruimtes te hoog						
4.1.3 Afwijzingen door de bewoners van de gewenste woning						
4.1.4 Te weinig prioriteit gesteld aan vinden van nieuwe woonruimte						

4.1.5 Financiële redenen						
4.1.6 Het willen wonen op een specifieke locatie						
4.1.7 Studie gerelateerde zaken (bijvoorbeeld tentamens)						
4.1.8 Oorzaak anders dan een van bovenstaande.						

4.2 Heb je tijdens het zoeken naar een woonruimte je eisen aangepast?

- Ja, ik heb meer eisen gesteld aan mijn eventuele woonruimte.
- Ja, ik heb minder eisen gesteld aan mijn eventuele woonruimte.
- Nee, ik heb mijn eisen niet aangepast.
- Nee, ik heb mijn budget verhoogd zodat ik eerder aan een eventuele woonruimte met mijn eisen kon komen.
- Anders, nl.

5 Persoonlijk

De volgende vragen gaan over je persoonlijke situatie.

5.1 Wat is je geboortedatum (dag – maand - jaar)?

____ - ____ - ____

5.2 Wat was je woonplaats voordat je begon met studeren?

5.3 In welke buurt woon je op dit moment? (*omcirkelen wat van toepassing is, voor buurtindeling zie bijlage*)

1. Binnenstad
2. Schilders- en Zeeheldenwijk
3. Vinkhuizen
4. Oranjewijk
5. Selwerd en Paddepoel

6. Korrewegwijk
7. Oosterparkwijk
8. Oosterpoortwijk
9. Herewegwijk en Helpman
10. Stadsparkwijk
11. Hoogkerk
12. Beijum en Lewenborg

5.4 Wat is je huidige volledige postcode (1234AB)?

5.5 Ben je voltijds student?

- Ja
- Nee

5.6 Werk je naast je studie?

- Ja
- Nee

5.7 Krijg je financiële steun van familieleden om rond te komen?

- Ja
- Nee

5.8 In welk jaar ben je begonnen met de studie?

- 2016
- 2015
- 2014
- 2013
- 2012
- 2011
- 2010
- 2009 of eerder

5.9 Hoeveel jaar verwacht je nog te moeten studeren?

- Een jaar of korter

- Een jaar tot twee jaar
- Langer dan twee jaar

5.10 Aan onderwijsinstelling studeer je?

- Rijksuniversiteit Groningen
- Hanzehogeschool
- Anders nl;

5.11 Aan welke faculteit studeer je?

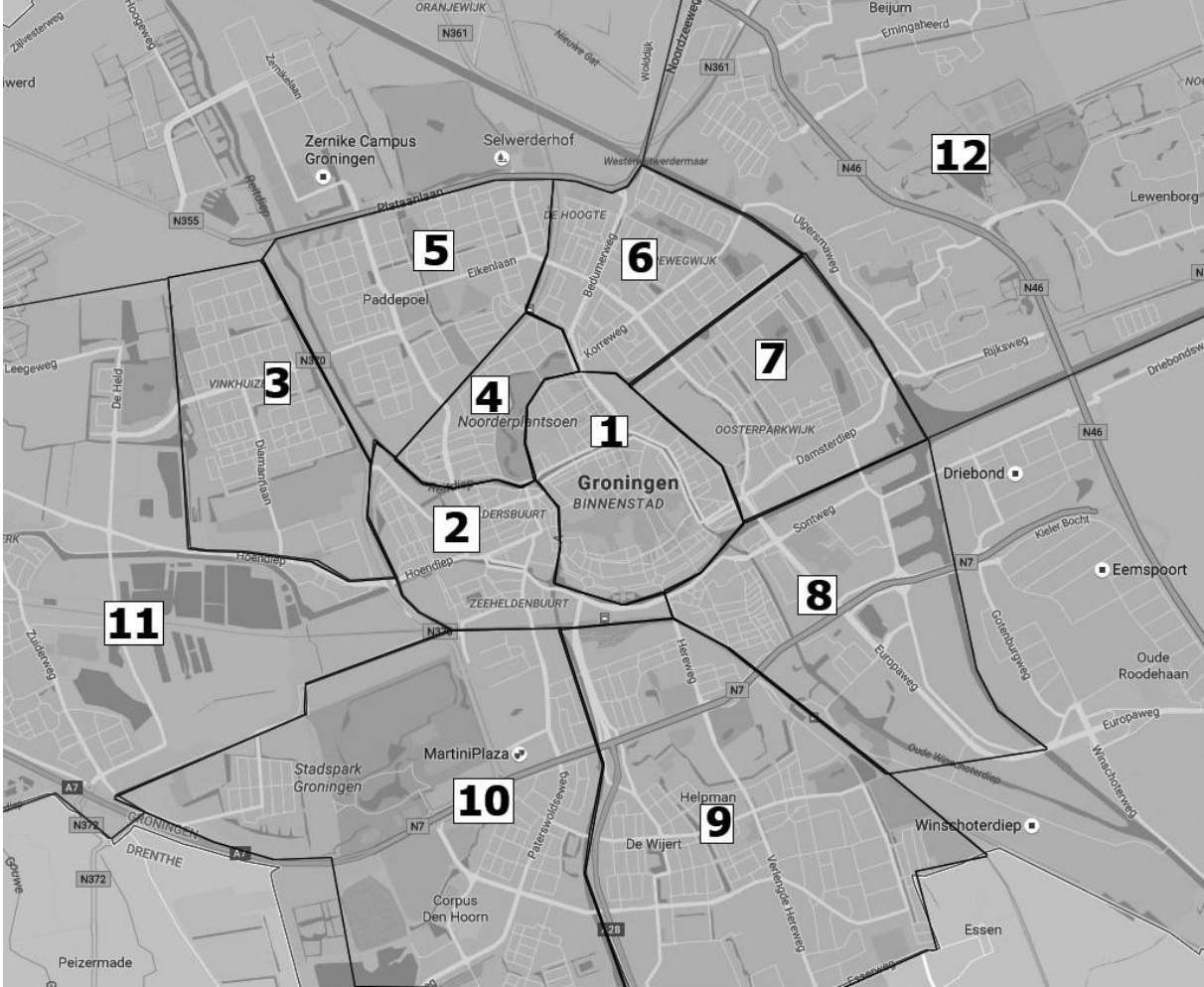
5.12 Ben je lid van een studentenvereniging? (*Let op: Geen studievereniging of sportvereniging*)

- Ja
- Nee

6 Einde

Bedankt voor het invullen van de enquête! Alle gegeven antwoorden zullen vertrouwelijk en anoniem behandeld worden. Als je kans wilt maken op één van de twee bioscoopbonnen vul dan onder je e-mail adres in. Deze zal enkel gebruikt worden voor de loting en zal niet gekoppeld worden aan de uiteindelijke data.

Bijlage buurtindeling



9.2 Appendix II Do File

```
use "X:\My Documents\Master\Masterscriptie\Statadata124.dta"
*Create Age variable
gen age_m = ym(2016, 12) - ym(jaar, maand)
. gen age_y = floor(age_m/12)
. tab age_y
. drop if age_y <16
*Create Previous Living Situation
. recode V_Woons (1 2 3 4 5 6 7 9 = 1 "uitwonend") (8 = 0 "thuiswonend"), gen(V_WoSit)
label(V_WoSit)
(260 differences between V_Woons and V_WoSit)
*Create maximum budget categories
recode Maxbudnum 0/300 = 0 301/350 = 1 351/400 = 2 401/450 = 3 451/500 = 4 500/max = 5,
generate(maxbud_cat)
*Create use of broker
recode Vin_hw (1 = 1 "used broker") (2 3 4 = 0 "no broker"), gen(BrokUse) label(BrokUse)
(368 differences between Vin_hw and BrokUse)
*Create Downtown
Verschil binnenstad en buiten binnenstad
recode WoBuu_hw (2 3 4 5 6 7 8 9 10 11 12 13 = 0 "outside downtown") (1 = 1 "downtown"),
gen(Downtown) label(Downtown)
*Create finding independent housing
recode H_Woons (1 2 3 6 = 0 "Room") (4 5 7 9 = 1 "Apartment and other"), gen(Liv_sitph)
label(Liv_sitph)
*Create Maximum budget categories
recode Maxbudnum 0/300 = 0 301/350 = 1 351/400 = 2 401/450 = 3 451/500 = 4 500/max = 5,
generate(maxbud_cat)
*Outliers search
Tab i.ZkWeek_hwC
Drop if ZkWeek_hwC>100
*Outliers rent present house
Tab i.rentph
Drop if rentph<100
Drop if
missing(age_y,Werk,Fin_Fam,RegGr,Downtown,Liv_sitph,BrokUse,Visit_ph,V_WoSit,rentph,maxbud_c
at,Verw_Stdu,Ond_Inst)
*Linear regression (including zero search time)
reg ZkWeek_hwC age_y Werk Fin_Fam RegGr Downtown Liv_sitph BrokUse Visit_ph V_WoSit rentph
i.maxbud_cat i.Verw_Stdu i.Ond_Inst, robust
(Linear regression (excluding zero search time)
reg ZkWeek_hwC age_y Werk Fin_Fam RegGr Downtown Liv_sitph BrokUse Visit_ph V_WoSit rentph
i.maxbud_cat i.Verw_Stdu i.Ond_Inst, robust
*logistic regression
generate SrchGr=ZkWeek_hwC
. egen SrchCat = cut(SrchGr), at(0,1,2,3,4,5,200)
. label define Srch_Wk 0 "0 weeks" 1 "1 week" 2 "2 weeks" 3 "3 weeks"
> 4 "4 weeks" 5 "5 weeks or more"
. label values SrchCat Srch_Wk
recode SrchCat (0=0 "Found") (1 2 3 4 5=1 "Not Found"), gen(Srch_Wk0) label(SrchGr_Wk0)
recode SrchCat (0 1=0 "Found") (2 3 4 5=1 "Not Found"), gen(Srch_Wk1) label(SrchGr_Wk1)
```

```

recode SrchCat (0 1 2=0 "Found") (3 4 5=1 "Not Found"), gen(Srch_Wk2) label(SrchGr_Wk2)
recode SrchCat (0 1 2 3=0 "Found") (4 5=1 "Not Found"), gen(Srch_Wk3) label(SrchGr_Wk3)
recode SrchCat (0 1 2 3 4=0 "Found") (5=1 "Not Found"), gen(Srch_Wk4) label(SrchGr_Wk4)
recode SrchCat (0 1 2 3 4 5=0 "Found") (6=1 "Not Found"), gen(Srch_Wk5) label(SrchGr_Wk5)
gen t0=0
gen t1=0
gen t2=0
gen t3=0
gen t4=0
gen t5=0
rename SrchGr Moved
(create logit format)
*manually creating variable Moved, 0 if not found 1 if found after 1 delete following cases of observation
logit Moved t1 t2 t3 t4 age_y Werk Fin_Fam RegGr Downtown Liv_sitph BrokUse Visit_ph V_WoSit
rentph i.maxbud_cat i.Verw_Stdu i.Ond_Inst, cl(RespN)
*for correlation matrix:
Cor ZkWeek_hwC age_y Werk Fin_Fam RegGr Downtown Liv_sitph BrokUse Visit_ph V_WoSit rentph
maxbud_cat Verw_Stdu Ond_Inst
*Difference between those finding housing in Downtown neighborhood and those who found housing
elsewhere in the city:
recode WoBuu_hw (2 3 4 5 6 7 8 9 10 11 12 13 = 0 "outside downtown") (1 = 1 "downtown"),
gen(Downtown) label(Downtown)
ttest ZkWeek_hwC, by(Downtown)
ttest ZkWeek_hw, by(Downtown)
*Self-proclaimed factors:
summarize Invl_bes Invl_KwWn Invl_Prij Invl_Prio Invl_Afw Invl_Fin Invl_Loc Invl_Stu Invl_And
. histogram Invl_bes, discrete percent adlabel
(start=0, width=1)
. histogram Invl_KwWn, discrete percent adlabel
(start=0, width=1)
. histogram Invl_Prij, discrete percent adlabel
(start=0, width=1)
. histogram Invl_Prio, discrete percent adlabel
(start=0, width=1)
. histogram Invl_Afw, discrete percent adlabel
(start=0, width=1)
. histogram Invl_Fin, discrete percent adlabel
(start=0, width=1)
. histogram Invl_Loc, discrete percent adlabel
(start=0, width=1)
. histogram Invl_Stu, discrete percent adlabel
(start=0, width=1)
. histogram Invl_And, discrete percent adlabel
(start=0, width=1)

```

9.3 Appendix III Correlation matrix

	Search in Weeks	Age	Job	Financial support family	From Region Groningen	Downtown	Living in independent housing	Broker	Number of inspections	Experience	Rent	Maximum budget	Years to study	Education Institution
Search in Weeks	1													
Age	0.0549	1												
Job	0.0354	0.0714	1											
Financial support family	0.0461	-0.1727	-0.1277	1										
From Region Groningen	0.0150	0.0926	0.0927	0.0134	1									
Downtown	-0.0005	0.0541	0.0658	0.0116	0.0488	1								
Living in independent housing	0.2154	0.2834	0.0923	-0.0798	0.1108	-0.0261	1							
Broker	0.1766	0.0230	-0.0104	-0.0667	-0.0664	-0.0181	0.1970	1						
Number of inspections	0.2188	-0.0089	0.0848	-0.0148	-0.0823	0.0438	0.0433	0.2159	1					
Experience	-0.0286	0.2953	0.0158	-0.0356	-0.0418	0.0524	0.1629	0.0250	-0.0170	1				
Rent	0.1038	0.2928	0.0920	-0.1822	0.0597	0.0838	0.5759	0.3339	0.1050	0.1890	1			
Maximum budget	0.1227	0.3267	0.1334	-0.2028	0.1101	0.1672	0.4821	0.2122	0.0877	0.1149	0.6516	1		
Years to study	-0.0403	-0.5396	-0.0407	0.0842	-0.0058	-0.0292	-0.1945	-0.0282	-0.0380	-0.2024	-0.1461	-0.1760	1	
Education Institution	0.0448	0.0097	0.0265	-0.1383	0.0083	-0.0075	0.0430	0.0642	0.0117	0.0676	0.0966	0.0911	-0.0771	1

9.4 Appendix IV T-test search duration Downtown STATA output

Ttest search time downtown and outside downtown

```
. ttest ZkWeek_hwC, by(Downtown)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
outside	331	3.087613	.3394539	6.175823	2.419847	3.75538
downtown	108	2.962963	.6045755	6.282933	1.764462	4.161463
combined	439	3.056948	.2956888	6.195369	2.475802	3.638093
diff		.1246503	.6873114		-1.226197	1.475497

```
diff = mean(outside) - mean(downtown)          t = 0.1814
Ho: diff = 0                                   degrees of freedom = 437
```

```
Ha: diff < 0          Ha: diff != 0          Ha: diff > 0
Pr(T < t) = 0.5719    Pr(|T| > |t|) = 0.8562    Pr(T > t) = 0.4281
```

```
. ttest ZkWeek_hw, by(Downtown)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
outside	202	5.059406	.5102585	7.252135	4.05326	6.065552
downtown	66	4.848485	.9186598	7.463228	3.013795	6.683175
combined	268	5.007463	.4453784	7.291159	4.130562	5.884363
diff		.2109211	1.035612		-1.828119	2.249961

```
diff = mean(outside) - mean(downtown)          t = 0.2037
Ho: diff = 0                                   degrees of freedom = 266
```

```
Ha: diff < 0          Ha: diff != 0          Ha: diff > 0
Pr(T < t) = 0.5806    Pr(|T| > |t|) = 0.8388    Pr(T > t) = 0.4194
```

9.5 Appendix V STATA output models:

OLS:

Model 1:

Linear regression	Number of obs	=	413
	F(19, 393)	=	3.81
	Prob > F	=	0.0000
	R-squared	=	0.1300
	Root MSE	=	5.6107

Model 2

Linear regression	Number of obs	=	252
	F(19, 232)	=	2.28
	Prob > F	=	0.0024
	R-squared	=	0.1784
	Root MSE	=	6.4871

Logit:

```
Iteration 0: log pseudolikelihood = -764.22418
Iteration 1: log pseudolikelihood = -709.47767
Iteration 2: log pseudolikelihood = -708.65872
Iteration 3: log pseudolikelihood = -708.65747
Iteration 4: log pseudolikelihood = -708.65747
```

Logistic regression	Number of obs	=	1,182
	Wald chi2(23)	=	148.35
	Prob > chi2	=	0.0000
Log pseudolikelihood = -708.65747	Pseudo R2	=	0.0727

(Std. Err. adjusted for 413 clusters in RespN)

9.6 Appendix VI Frequency of search duration in weeks (dependent variable)

Search in Weeks	Freq.	Percent	Cum.
0	163	39,46731	39,46731
1	55	13,31719	52,7845
2	48	11,62228	64,40678
3	40	9,68523	74,09201
4	36	8,716707	82,80872
5	10	2,421308	85,23002
6	14	3,389831	88,61985
8	16	3,874092	92,49395
9	2	0,484262	92,97821
10	9	2,179177	95,15738
12	5	1,210654	96,36804
13	1	0,242131	96,61017
16	3	0,726392	97,33656
20	5	1,210654	98,54722
21	1	0,242131	98,78935
24	1	0,242131	99,03148
26	1	0,242131	99,27361
30	1	0,242131	99,51574
52	1	0,242131	99,75787
70	1	0,242131	100
Total N	413	100	