The need for family-housing in Dutch city centres

A research about the willingness of families to live in the city centre and their corresponding housing preferences

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Preface

"Many young families leave the big city", "More families leave the city", "Young family more often move from the city to the cheaper suburbs", "Families with young children leave Amsterdam behind", "More and more young families leave the city", and so on. The last couple of years, the newspapers were unanimous: families leave the city behind. The question is whether or not this can be considered as a new trend, since this has been going on for decades. The majority of the families move from the city to the suburbs or to other municipalities in order to raise their children. However, there appear to be more factors influencing the decision to leave the city behind. (Family-)housing in the city centre districts is gradually becoming unaffordable and if there is finally housing available, it does not match the housing requirements and preferences of the urban-oriented group of families. Bouwfonds Property Development (BPD) does not only develop single-family housing for families in non-urban living environments, but it is also engaged in developing urban housing which meets the needs and requirements of families who consciously choose to live in the city. This raises the question to what extent families are willing to live in the city (centre) districts and what they need and prefer in terms of multi-family housing. And what type of families are interested in living in an urban environment?

These questions have been the reason for this research about families their willingness to live in the city (centre) districts and the corresponding residential preferences. The study "*The need for multi-family housing in Dutch city centres"* is done in the context of the master Real Estate Studies at the University of Groningen. As a graduate student at the Research department of Bouwfonds Property Development (BPD), I have been doing this research with pleasure. I would really like to thank my colleagues for the tips and advice and, in particular Mr. Joosten and Mr. Klaver for the opportunity to write my master thesis at BPD and for the great guidance during this period. Finally, I would like to thank my supervisor Prof. Dr. E. F. Nozeman for his confidence in me, his patience and the helpful feedback.

Niels Gersonius

Summary

The last years the gap between families moving towards the four major Dutch municipalities and families leaving these municipalities has increased, while more and more middle-class families seem to find the city centre an attractive place to live. There is a lack of suitable and affordable family-housing because developers believe there is a limited market for family-housing in urban living environments and therefore do not design multi-family homes in the city centre, while urban-oriented families cannot find suitable multi-family homes and generate no demand, even though this group is interested to live in the city centre. Research could take away the stereotype among these urban policymakers, architects and developers that the city centre is only suitable for small apartments and that it is the perfect habitat for singles or couples without children.

The objective of this study is to find out to what extent families are willing to live in the city centre or districts nearby. The corresponding research question is: *To what extent are families willing to choose for a home in the city centre or districts nearby instead of one in the suburbs or in another municipality (nearby) in the Netherlands, and if so, for what reasons?* The focus is on the determinants at stake considering moving, what type(s) of families prefer an urban living environment and which pull and push factors are at stake for families regarding family-housing in the city centre or districts nearby. In order to answer the research- and sub-questions, literature, secondary data and a self-designed online survey are used. The analysis is based upon whether the respondent has an urban or non-urban preference, and whether the respondent is living in a G4-municipality or in one of the 25 smaller municipalities.

There are five categories of determinants at stake considering moving according to literature: household characteristics, housing characteristics, neighbourhood characteristics and accessibility, social embeddedness and residential history. The odds of having a preference for the city centre or districts nearby are greater when the family is a single-parent family, when the family has an urban residential history and when the family considers the proximity to work as important, when the proximity to greenery is unimportant and when housing between 75 and 175 square metres is preferred. Families most often prefer to move to the city centre due to the rush and sociability of the city, the proximity to amenities and because they consider it as pleasant and/or beautiful. The proximity to daily shops, school, the rush of the city centre and the proximity to work were mentioned the most often as important reasons for an urban living environment.

Pull factors are newly-built, owner-occupied housing. The apartment is the most preferred type of multi-family housing. Pull factors in terms of the home itself are a bedroom for each child, a storage room, an extra room, a private garden and a private balcony. A bedroom for each child and a private garden are by far the two most important aspects in the multi-family home. Pull factors in terms of the building are a shared garden only for residents, a private bicycle parking and a private car parking. A car-free street and a large pavement for children to play are the most important pull factors in terms of the neighbourhood. For families with a preference for single-family housing, it is shown that a private garden, a bedroom for each child and an extra room would be the greatest pull factors of multi-family housing. A lack of these can be considered as push factors of multi-family housing.

The conclusion is that 36.9% of the families is willing to choose for the city centre or districts nearby, and a maximum of 79.2% of them could accept to live in multi-family housing.

Multi-family housing is in particular needed to prevent middle-income families from leaving the city (centre). In more and more cities, housing prices are increasing to a price which is higher than the maximum price a middle-income family can afford. Because these families are not eligible for social housing and due to the shortage of available housing in the private rental sector, the only option left is leaving the city districts and moving to the suburbs or other municipalities.

Further research could make use of the conjoint analysis method, in order to see whether families have the same preferences when they have to make trade-offs. Moreover, variables based on the housing supply and housing prices could be included, as availability and affordability of housing plays an important role in the residential location choice. Besides that, it could be interesting to see if residential preferences would be the same in times of financial crises. Finally, it would be interesting to know what families are willing to pay in terms of the residential location, as well as in terms of the house and the building itself.

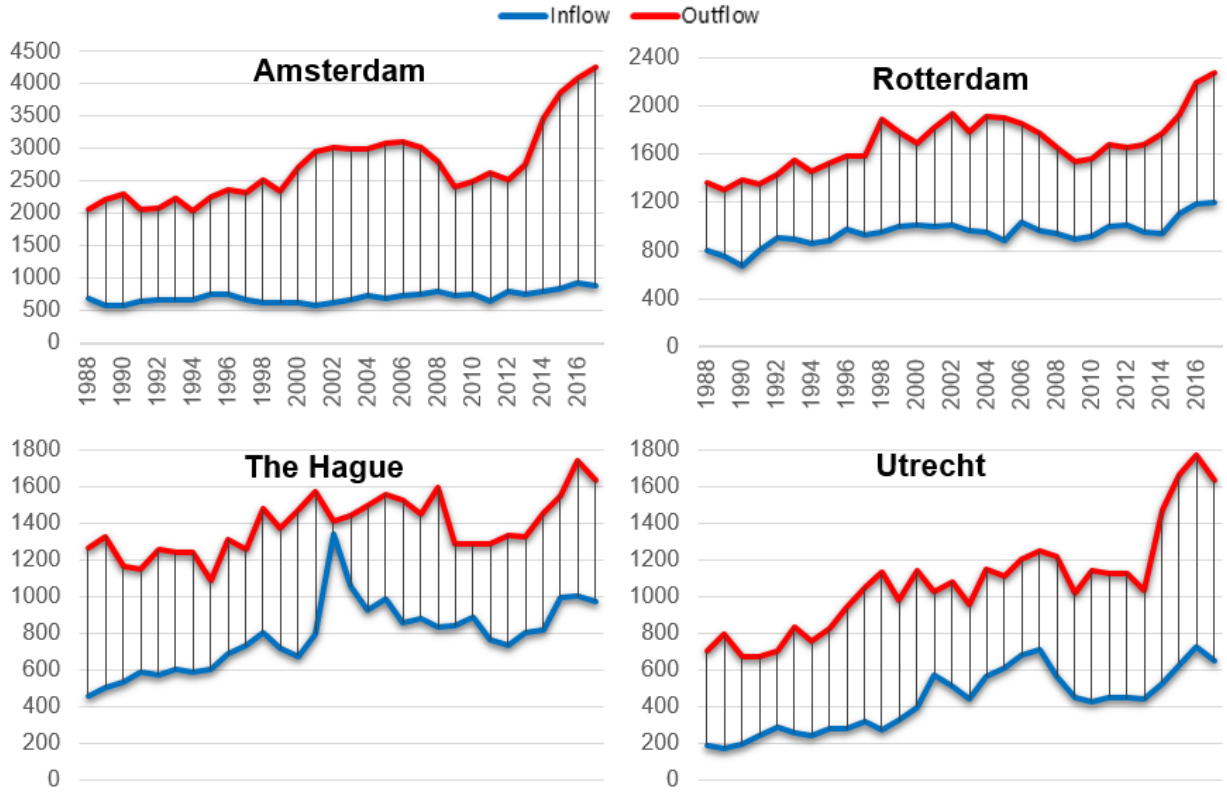
Contents

1 Introduction

1.1 Motivation

Amsterdam, Rotterdam and Utrecht are all dealing with the same phenomenon: an increasing negative net migration rate of families with children aged up to five years old[1] (figure 1) (Van Huis et al., 2004). Especially the last years the gap between families moving towards these major municipalities and families leaving these municipalities has increased. While the inflow of families with young children (0-5) has slightly increased over the past decades, since 1988, the outflow of these households has more than doubled (figure 1). The Hague is the only municipality where the negative net migration rate has remained rather stable, because the inflow has increased strongly since 1988. This is probably (partly) due to the fact that The Hague has enlarged its territory with several Vinex-locations hosting many (new) families.

Figure 1. Inflow and outflow of families with young children (0-5) concerning Amsterdam, Rotterdam, The Hague and Utrecht 1988 – 2017*



Source: CBS (2018a)

**Note that values on the y-axis differ per graph*

[1] Note that it is about selective migration. Although an increasing negative net migration rate of families with young children has taken place, the total population (De Beer et al., 2017) and the number of families with young children, have both increased in these municipalities (CBS, 2016) during the given period.

Moreover, of all couples who got their first child in 2012, 14 percent have left within four years to another municipality. In the case of the four major municipalities, this was two to three times more (CBS, 2017a)[2]. According to Kamerman (2013), they leave in particular the city centre and move to other municipalities (nearby) (CBS, 2016). This outflow is mainly due to dissatisfaction concerning the current home, as the percentage of families considering the house as the main reason for moving has already increased for the third time in a row (Laarman & van Dam, 2018).

The need for suitable and affordable multi-family housing

At first sight, it seems quite logical that many families are looking for a big single-family home outside the city to raise their children (Van Hemert et al., 2017; Jean, 2014). However, more and more dual-earner, middle-class families seem to find the city centre[3] and districts nearby[4] an attractive place to live (Van Hemert et al., 2017; Van den Berg, 2013; Silverman, 2007; Karsten & Van Kempen, 2001). These families have a lifestyle where the proximity of work, amenities, friends and family (Karsten, 2007), together with diversity and "the buzz" are considered as more important than a big house for a lower price in the suburbs (Jean, 2014). So, although a typical suburban house with a big garden is not even possible in the city centre (Karsten, 2009) due to the high land prices (Vinke et al., 2016) and the unavailability of land (Van Hemert et al., 2017), this is not even something they are looking for (Gemeente Den Haag, 2011; Karsten, 2009).

However, they are not (yet) willing to live in the city centre or districts nearby as housing is not seen as suitable to raise their children. Their housing preferences do not necessarily seem to refer to more appropriate space, but they seem to favour for example small, communal green and playable spaces, such as shared outdoor spaces and roof terraces, spaces which *"accommodate the combination of playing, caring, working, socializing and networking with neighbours"* (Karsten, 2009: 325). Although it seems like a certain part of (young) families is willing to stay in the city centre, the lack of suitable and affordable family-housing (Lennartz & Vrieselaar, 2018) causes middle-income families[5] to leave to the suburbs or to other municipalities. Their income is too high to be eligible for social housing (DNB, 2017) and prices of owner-occupied housing have increased since mid-2013 in such a strong degree (CBS, 2017b) that it is nowadays unaffordable (DNB, 2017; Couzy, 2017; De Bruyne & Iserbyt, 2011), Moreover, the sharper financing conditions have made it harder to get a mortgage (Vlak et al.,

[2] Unfortunately there is no literature or data available about the percentage of families which have left particularly the city centre to move to other living environments in the past years.

[3] The historical city centre or new urban centres, classified by VROM (2004) as *Centrum-stedelijk*.

[4] Residential districts located around or close to the city centre, classified by VROM (2004) as *Buiten-centrum.*

[5] Households with a gross income between €34,000 and €52,000 (Van Middelkoop & Schilder, 2017).

2017). Furthermore they are often out-bidden by (private) investors (Lennartz & Vrieselaar, 2018; Hekwolter of Hekhuis et al., 2017). The private rental sector would be the best alternative for these families, but planning restrictions on new construction, a lack of building and planning capacity (Hekwolter of Hekhuis et al., 2017) and a focus mainly on other types of residential units (Julen, 2017) have resulted in a shortage of available housing in this sector (Laarman & Van Dam, 2018; DNB, 2017). This phenomenon has also been signalled in other metropolitan areas in western economies. Vancouver (Canada) and cities in the United States are dealing with this so-called "missing-middle" as well (Shaver, 2017). Owing to the surging economy, competitive housing markets (Reid, 2018) and rising house prices (Dreyfuss, 2016), many middle-income families leave the city (O'Connor, 2018). The same applies to Australian cities, partly due to the fact that tax-favoured housing investors are outbidding first home buyers (The Age, 2005) and to Antwerp (Belgium), where families with young children (0-6) are leaving the city centre as well: *"Dat soort gezinnen trekt massaal weg uit de binnenstad"* (Willocx, 2018).

Social relevance

As Karsten (2003) has argued, in the Netherlands, this urban-oriented group of families with children (in particular middle-income families) does not seem to be an important interest-group to accommodate. Urban policymakers, architects and developers focus often on the short-term, by offering small apartments which do not have for example sufficient outdoor space (De Ceuster, 2017). Developers lack confidence that a part of the family-households is interested in inner urban environments and they are informed by existing patterns showing overwhelmingly the family preferences for a traditional family house (Silverman et al., 2005). They believe there is a limited market for family-housing in urban living environments and therefore do not design multi-family homes in the city centre, while urban-oriented families cannot find suitable multi-family homes and generate no demand, even though this group is interested to live in the city centre. This quantitative and qualitative mismatch between demand and supply of housing in the city centre, could be solved when research would be done (Van Hemert et al., 2017). This research will create more knowledge about the demand for multi-family homes in the city centre and what type of multi-family housing is needed and preferred. In this way, this research could solve the 'chicken and egg' situation among developers (supply) and families (demand). By providing an answer to the question "Do households with children prefer to live in a home in the city centre and if so, for what reasons", this research could take away the stereotype among these urban policymakers, architects and developers that the city centre is only suitable for small apartments and that it is the perfect habitat for singles or couples without children.

1.2 Literature review

This research is connected to literature on residential mobility and location. Clark & Onaka (1983) have analysed this by looking at housing, the neighbourhood and accessibility as well as employment and the life cycle. They show that the nature of housing adjustment depends on the stage of the household life cycle. Even though it is already argued that life-cycle stage is closely related to economic means, Deurloo et al. (1986) state that there is a gap in the literature on the nature of interaction between income and other variables as these influence housing choice. Their research suggests that income is the principal factor behind tenure/type of housing choice. Karsten (2007) argues that these traditional housing studies mainly focus on economic and demographic factors as the most important determinants of residential choice. Therefore, she mentions the site and situation of the neighbourhood, the social embeddedness of families and the desire to belong to certain social circles and places (identity) as explanation for residential location. Gehrke et al. (2018) elaborate on this by stating that beyond socioeconomic factors, neighbourhood preference is also predicated on housing, transportation and accessibility characteristics. Boterman et al. (2010) elaborate on Karsten's (2007) research as well, and find that housing, employment, consumption, education and time are fields that play an important role in determining which neighbourhoods match with the housing preferences of middle-class groups. Liao et al. (2015) agree with Boterman et al. (2010) and show that preferences toward compact development are sensitive to educational attainment, income, and to important events in a lifecycle, such as childbirth, but especially to household tenure. Lilius (2014) continues on this by revealing more reasons to choose for a city life: the attractiveness of population density, good amenities and good public transport (Lilius, 2014). In addition to Boterman et al. (2010) and Lilius (2014), Zondag & Pieters (2005) show that compared to the effect of demographic factors, neighborhood amenities and dwelling attributes, the role of accessibility is significant but rather small in explaining residential location choices.

Scientific relevance

Even though young families have been mentioned in previous studies (see section 1.2), these studies never focused on the relation between these households and their housing preferences, and especially not in relation to the city centre, while there does seem to be an urban-oriented group of families with children interested to live in the city centre. This is a subject which has barely been studied in the past years (Van Hemert et al., 2017). Research in the Netherlands about this issue is substantially absent[6] and therefore there is no clarity

[6] On Google Scholar there are no particular articles available about the residential location choice of families concerning the city centre when using keywords such as: residential location choice families city centre, residential mobility, families moving to the city centre, moving behaviour families, urban family housing, family housing city centre.

about what requirements a multi-family home has to meet in order to be suitable and attractive for families (Van Hemert et al., 2017). Therefore, in order to close the gap and to contribute to scientific literature, this research will focus on the residential preferences of families and the underlying reasons why, how and which type of families would prefer to live in the city centre or districts nearby.

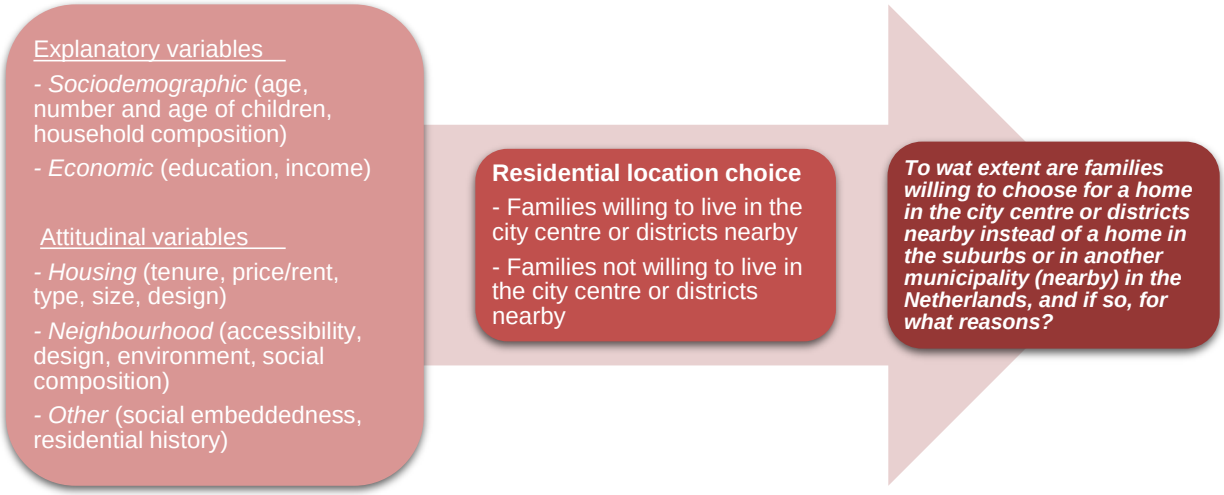
1.3 Research problem

The research aim of this study is to examine why, how and which type of families would prefer to live in the city centre or districts nearby in the Netherlands. The central research question and corresponding sub-questions are:

To what extent are families willing to choose for a home in the city centre or districts nearby instead of one in the suburbs or in another municipality (nearby) in the Netherlands, and if so, for what reasons?

1. *Which determinants are at stake for households considering moving according to literature, in particular families?*
2. *Which type(s) of families prefer the city centre or districts nearby instead of other living environments as a place to live, and why, based on empirical research?*
3. *Which push and pull factors are at stake for families regarding the single- or multi-family home in the city centre or districts nearby based on empirical research?*

Figure 2. Conceptual model regarding the residential location choice of families in the Netherlands



Source: Author (2019)

These sub-questions will be answered by making use of literature (sub-question 1), statistical data from the WoON-research[7] from 2006-2015 (sub-question 2) and data coming from a self-designed survey[8] (sub-question 2 & 3). WoON-data comprise sociodemographic and economic data and can be considered as explanatory variables in figure 2. Certain preferences for housing, neighbourhoods and accessibility, but also social embeddedness and the residential history could play a role. Push factors relate to aspects of houses in the city centre which have caused, or would cause families not to choose for the city centre as a place to live and pull factors relate to aspects of houses in the city centre which would cause families to choose for the city centre as a place to live. These attitudinal variables can be seen in the left box in figure 2.

Research objective

The objective of this study is to find out to what extent families are willing to live in the city centre or districts nearby (figure 2, right box). First, it is the goal to determine which types of families are willing to live in the city centre referring to the urban-oriented group of families with children which are not seen as an important interest-group to accommodate in the Netherlands (Karsten, 2003). This can be explained by the sociodemographic and economic variables regarding households (respondents). Second, it is the goal to find out which attitudinal variables determine the preference to live in the city centre for these families. This preference could be due to favouring a particular type of housing, neighbourhood, due to the accessibility of a specific location, due to their residential history or could be cause by their social embeddedness in the city. Third, the goal is to get more insight into the push and pull factors concerning family-housing in the city centre and to provide more clarity about the requirements a multi-family home has to meet in order to be suitable and attractive for families (Van Hemert et al., 2017).

1.4 Outline

After the introduction in chapter 1, this research will continue with a theoretical framework in chapter 2. Theories concerning the residential location choice of families will be discussed. The third chapter includes a description of the methodology and the data. The results of the data analysis will be revealed in chapter 4. The research ends with a discussion about the results, a conclusion and recommendations in chapter 5.

[7] The WoON-research is a research commissioned by the Dutch government and carried out by Statistics Netherlands (CBS). It is an extensive survey with almost 70,000 households as participants about how people live and how they would like to live, in order to be able to identify relations between characteristics of households (such as income), characteristics of the housing situation and the personal experience linked to this.

[8] The survey is a self-designed survey commissioned by Bouwfonds Property Development (BPD). Respondents, all member of a household with at least one child from 0 to 18, will be approached by e-mail as they are member of PanelClix. The self-designed survey will be carried out by the researcher itself and will contain questions about the explanatory variables and attitudinal variables (figure 2).

2 Theory

In this chapter the first sub-question of the research will be answered: *Which determinants are at stake for households considering moving according to literature, in particular families?*

2.1 Household characteristics

Literature regarding residential location choice has indicated that residential preferences and residential mobility can be roughly divided into four categories: household characteristics, housing characteristics, neighbourhood characteristics and accessibility (Clark & Onaka, 1983; Pickvance, 1974).

One of the most important drivers of the residential location choice is the household's life-cycle. Through the years, a large number of studies have been devoted to the residential location choice and residential mobility and in particular to the life-cycle theory (Lawton et al., 2013; Clark & Huang, 2003; Clark et al., 1984; Pickvance, 1974). Much research has been published on the relationship between these phenomena, which have further developed the theory predicting that the degree of residential mobility is dependent on a household's life-cycle.

The life-cycle theory was originally developed by Rossi (1955), who stated that *"housing need or dissatisfaction arises largely from changes in household life cycle …"* (Clark & Onaka, 1983: 47). He argued that residential mobility could be *"explained in terms of individual efforts to satisfy housing needs brought about by life-cycle changes"* (McAuly & Nutty, 1982). One could think of a change in marital status (Clark & Huang, 2003; Clark & Onaka, 1983; Brown & Moore, 1970), a change in age of the parents and/or children (Flambard, 2017; Deurloo et al., 1986) or a change in the household size (Flambard, 2017; Pattaroni et al., 2009; Karsten, 2007; Brown & Moore, 1970), such as childbirth (Boterman et al., 2010; Clark & Huang, 2003; Feijten & Mulder, 2002). Moves like these indicate a change in the need for physical space, meaning the residential preferences of a household change as well (Lawton et al., 2013). Especially the birth of a child tends to have a strong impact on these preferences (Gehrke et al., 2018; Liao et al., 2015; Smith & Olaru, 2013; Chen & Lin, 2011): more physical space is needed, which leads to a trade-off between more space and a child-friendly environment on the one hand, and the ease of transport accessibility to the workplace and to many amenities on the other hand (Lawton et al., 2013). Eventually, this determines the choice between a residence in the suburbs, in the city centre or in one of the three other living environments as mentioned in section 2.2. This was shown by Varady (1990), who indicated that the presence of children appeared to have the strongest indirect effect on the choice to live in the suburbs. Therefore,

one can state that moves through the life-cycle indeed change residential preferences of households.

However, Brown & Moore (1970) contributed to Rossi's (1955) theory by arguing that housing need or dissatisfaction may not only be caused by changes in the household's life-cycle, but also by changes in the environment. By this they meant *"… characteristics of its dwelling unit, its neighborhood, and the relocation of its dwelling unit in relation to other nodes in the household's movement cycles"* (Brown & Moore, 1970: 2). Murie (1974) argued that the (local) housing market also could play a role in the residential location choice of households and Coupe & Morgan (1981) added to the theory as well, by stating that housing need or dissatisfaction may also be determined by residential history.

Furthermore, according to Kendig (1984) the life-cycle influences residential mobility because it is usually associated with economic resources. Income is one of these economic aspects which influences the residential choice (Flambard, 2017). Although sociodemographic aspects play an important role in the explanation of residential location choice, Deurloo et al. (1986) even stated that income is the principal factor, because the factor which allows households to actually move appears to be that of (increased) wealth (Doling, 1976).

Besides income, employment is another economic aspect which could influence the residential location choice (Pattaroni et al., 2009). Research by Karsten (2007) has shown that work-related factors seem to be strong determinants of families' residential location, which is also mentioned by Feijten et al. (2008), who state that people move in order to live closer to their work. Working families are dealing with a scarcity of time, making them vulnerable to problems of distance and accessibility (Karsten, 2007). Therefore, proximity to work is the primary reason for families for not moving out of the city (Karsten, 2007), and Varady (1990) even states that if both parents are working, this contributes to an increased likelihood for the city centre as a place to live.

Also the level of education is a factor in the residential location choice. Highly-educated people have a higher likelihood of preferring compact development in terms of amenities (Liao et al., 2015; Lewis & Baldassare, 2010), as the close proximity to a broad range of amenities (such as childcare) is celebrated as an advantage of living in an urban area (Karsten, 2007). Frenkel et al. (2013) agree on this, as knowledge workers are especially looking for urban environments that are rich in retail and culture, alongside more usual location factors such as transport facilities. A reason for this could be that these middle-class parents may be more

willing to raise children in cities because they have experienced city life as single adults and young couples (Silverman, 2007).

2.2 Housing characteristics

As explained in the previous section, in traditional studies concerning the residential location choice, sociodemographic factors were considered as the most important determinants (Gehrke et al., 2018; Karsten, 2007). Especially the life-cycle was one of the most used theoretical approaches in order to understand the relationship between family dynamics, housing career and residential relocations (Mulder & Hooimeijer, 1999). *"A residential decision is considered to be a function of the price of a household can afford and the size of the family or the number and age of their children"* (Karsten, 2007: 84-85), indicating that the focus was on demographic and economic factors.

In order to gain a deeper understanding of housing issues, Karsten (2007) argues that it is necessary to analyse the interrelationship of housing with the broader context of family needs. Liao et al. (2015) agree on the importance of this, as recent literature has revealed that subjective factors and attitudes have an influence on residential preferences as well (Lewis & Baldassare, 2010; Olaru et al., 2011; Schwanen & Mokhtarian, 2007). Also Gehrke et al. (2018) agree on this, as they believe that studies often rely on sociodemographic characteristics (household characteristics) in order to measure differences in residential location choices, while transportation characteristics, proximity to a broad range of amenities (Karsten, 2007) and housing influencing the neighbourhood preference may precede the residential location choice.

According to Clark & Onaka (1983: 49), *"space is usually the dominant factor in the decision to move"*. The current house might be considered too small, due to for example a shortage of bedrooms, making the household decide to relocate. Besides the size of the house, the price (So et al., 2001; Cameron & Muellbauer, 1998), age and quality/design are considered as important factors of residential mobility too (Clark & Onaka, 1983; Rossi, 1980).
Several studies have indicated the importance of housing tenure as a factor of residential location choice, especially in the movement of households from rental to owner-occupied housing (Clark & Onaka, 1983). One could think of a couple which is currently living in a rental apartment, but prefers to become a homeowner. In this case, housing tenure would be a reason to relocate, as most households cannot change tenure without relocation (Clark & Onaka, 1983). However, whether a household is able to become a homeowner depends on their financial resources (Mulder, 1996), as owner-occupied housing brings about a much stronger financial burden than rental housing (Feijten & Mulder, 2002). According to Kendig

(1984: 278) *"tenure is determined more by the constraints of limited income and savings than by need as indicated by life cycle or age"*, making it plausible to assume that a change of tenure is usually preceded by a change in income, instead of a change of age. Tenure plays an important role in another way, as households moving to a rental house tend to be more sensitive to accessibility attributes, while households becoming homeowners seem to be more concerned about their new house (Bina et al., 2006; Cao, 2008).

2.3 Neighbourhood characteristics and accessibility

Besides housing characteristics, Pickvance (1974) and Clark & Onaka (1983) mention another category: neighbourhood characteristics. Karsten (2007) mentions this category as well, by stating that *"the site (accommodation of daily life) and situation (location) of the neighbourhood are important conditions for family life"* (Karsten, 2007: 85). The location of the neighbourhood is more than relevant, as the residential environment (urban/non-urban) is an important feature in the residential location choice of households (Deurloo et al., 1990; Courgeau, 1989; Michelson, 1977). The location of a neighbourhood is also closely related to accessibility, which is a determinant of residential location choice as well (Clark & Onaka, 1983).

According to Bell (1968), middle-class families would prefer a suburban residential location because this matches with their own preferences such as more space (for housing), greenery, a safe environment for children (Karsten, 2007) and the presence of many other middle-class families in the neighbourhood (Boterman et al., 2010), even though more and cheaper space in the suburbs means longer and more costly travel to work (Lawton et al., 2013).

However, although most of the literature on residential location choice is based on the theory that middle-class families prefer a suburban residential location because this matches with their own preferences, there are studies which provide different insights into residential preferences, as there are four other types of living environments where households could prefer to locate as well (section 2.2). Instead of focusing on households moving from city districts to the suburbs, these studies have focused on the movement in opposite direction: from the suburbs to city districts. The return of these people (and capital) to the city (centre) is called 'gentrification' (Boterman et al., 2010). Although much research has been done about gentrifiers, which refers mainly to middle-class singles and couples without children, there is a lack of knowledge about gentrifiers with children (Karsten, 2003). This is also because the city centre is still seen as a location not appropriate for raising a family (Heath, 2001).

Nevertheless, more and more dual-earner, middle-class families seem to find the city centre an attractive place to live (Van den Berg, 2013; Silverman, 2007). As Kim et al. (2005b) have

pointed out, the location and ease of transport accessibility to the workplace are important elements in the selection of a residence. Usually, the city centre is characterized by a high accessibility due to good public transport facilities (Goodsell, 2013; Karsten & Van Kempen, 2001), their central place in networks of railways and air traffic and due to short distances between amenities (Feijten et al., 2008). In this way, one could understand the fact that research has indicated that living in the city centre makes it easier to find a work – life balance (Lilius, 2014; Lees et al., 2008). Commuting time to work (Goodsell, 2013; Van den Berg, 2013; Boterman et al., 2010; Fagnani, 1993; Rose & Chicoine, 1991) or to amenities (Goodsell, 2013; Van den Berg, 2013; Karsten, 2007; Karsten & Van Kempen, 2001) is shorter, allowing for more time with children (Silverman, 2007). This is confirmed by the study of Kim et al. (2005b), as they showed that individuals prefer residential locations with a combination of shorter commuting time and lower transport costs.

2.4 Other factors in residential location choice

However, the preference for a certain (type of) neighbourhood might also be caused by other factors. Karsten (2007) indicates the desire to belong to certain social circles (and places) advances identity as a category of explanations for residential location, also called: 'social embeddedness'. One could think of cultural consumption (Jean, 2014; Boterman et al., 2010; Fagnani, 1993), a tolerant atmosphere (Goodsell, 2013; Boterman et al., 2010), the proximity to family members (Jean, 2014; Mulder, 2007) or other members of their social network (Jean, 2014; Goodsell, 2013; Feijten et al., 2008), or because it satisfies their lifestyle aspirations (Goodsell, 2013; Kim et al., 2005a). Especially for people who are divorced, single or widowed, which are the so-called single-parent families, cities can be seen as attractive places to meet a new partner or to spend time with friends (Silverman, 2007).

But also the residential history could play a role in residential location choice. As indicated by Feijten et al. (2008: 144), *"Residential experience may influence people to return to places where they (or members of their household) previously lived because they still participate in activities there (activity), or because they may want to be closer to members of their social network (social), or because they know that place and value it in a positive way (awareness)"*. Gluszak & Marona (2016) also indicate the importance of the previous residence location, but they mention the importance of the distance between the previous and the new location of residence as well. The further the distance from the previous location, the less likely a household is willing to choose a location within an urban area (Gluszak & Marona, 2016). Therefore it becomes clear that a key factor in predicting the choice between the city and the suburbs, or between one of the other living environments as mentioned in section 2.2, is knowing where a certain household moved from (Varady, 1990).

Besides social embeddedness and residential history, the local housing market could influence residential preferences as well. According to Wiest (2011), the decisions where to move to mirror discrepancies between preferred housing and the limited options on the housing market. On the contrary, Wiest (2011) states that the housing preferences are also determined by residents their common-sense knowledge concerning the supply on the local housing market. Furthermore, results of the WoON-survey 2015 reveal several differences in residential preferences between families living in the G4 and families living in smaller municipalities (table 1).

Table 1. Results of WoON-survey 2015 concerning families living in G4 and G27

Variables		G4	G27
Preferred housing type	Multi-family	37.5 %	14.7 %
	Single family	57.2 %	78.2 %
	Other	5.3 %	7.1 %
Preferred housing size	Size	123.79 m²	143.07 m²
Preferred tenure	Owner-occupancy	39.2 %	53.5 %
	Rental	44.6 %	30.6 %
	No preference	16.2 %	15.9 %
Preferred price if buying	Price	€323,712	€287,120
Preferred distance to primary school	Up to 500 metres	43.1 %	28.6 %
	Up to 5 kilometres	49.3 %	63.0 %
	Further away	2.2 %	3.4 %
	No preference	5.4 %	4.9 %
Preferred distance to daily-shops	Up to 500 metres	47.7 %	23.7 %
	Up to 5 kilometres	34.6 %	57.6 %
	Further away	4.6 %	5.8 %
	No preference	13.1 %	12.9 %
Preferred distance to non-daily shops	Up to 500 metres	31.1 %	16.6 %
	Up to 5 kilometres	47.8 %	55.5 %
	Further away	10.7 %	15.0 %
	No preference	10.4 %	12.9 %

Source: Cremers & Van Engelen (2016)

After all, a major shortcoming of the reviewed studies is that they do not fully focus on the underlying reasons for residential preferences concerning the city centre in particular. Although prior studies assume that several factors determine the residential location choices and residential preferences, there is no clarity about to what extent these residential preferences correspond with characteristics of the city centre. This research seeks to fill this gap by analyzing the residential preferences of families by focusing on their willingness to live in the city centre, by using a set of variables being relevant in the residential location choice, which can be seen in table 2.

Table 2. Relevant variables in the residential location choice

Variables	Authors
Age	Flambard (2017); Deurloo et al. (1986)
Age oldest child	Gehrke et al. (2018); Flambard (2017); Liao et al. (2015); Smith & Olaru (2015); Chen & Lin (2011); Boterman et al. (2010); Karsten (2007); Clark & Huang (2003); Feijten & Mulder (2002); Deurloo et al. (1986); Clark & Onaka (1983)
Number of children	Flambard (2017); Pattaroni et al. (2009); Karsten (2007); Varady (1990); Brown & Moore (1970)
Household composition	Silverman (2007)
Income level	Flambard (2017); Deurloo et al. (1986); Kendig (1984)
Level of education	Liao et al. (2015); Frenkel et al. (2013); Lewis & Baldassare (2010)
Residential history	Gluszak & Marona (2016); Feijten et al. (2008); Silverman (2007); Varady (1990); Coupe & Morgan (1981)
Social embeddedness	Jean (2014); Goodsell (2013); Feijten et al. (2008); Karsten (2007); Mulder (2007)
Proximity to work	Goodsell (2013); Van den Berg (2013); Boterman et al. (2010); Pattaroni et al. (2009); Feijten et al. (2008); Karsten (2007); Fagnani (1993); Rose & Chicoine (1991); Varady (1990)
Preferred housing size	Clark & Onaka (1983); Bell (1968)
Amenities	Goodsell (2013); Van den Berg (2013); Feijten et al. (2008); Karsten (2007); Karsten & Van Kempen (2001)
Proximity to bus/metro/tram station	Goodsell (2013); Kim et al. (2005b); Karsten & Van Kempen (2001); Clark & Onaka (1983)
Proximity to train station	Goodsell (2013); Kim et al. (2005b); Karsten & Van Kempen (2001); Clark & Onaka (1983)
A house with a garden	Bell (1968)
Safety of the neighbourhood	Karsten (2007)
Traffic safety	Karsten (2007)
Presence of other families in the neighbourhood	Boterman et al. (2010)

Source: Author (2019)

Answer to sub-question 1

Which determinants are at stake for households considering moving according to literature, in particular families?

According to literature, five categories of determinants can be distinguished. Household characteristics are the first one, with the household's life-cycle as one of the most important drivers of the residential location choice, together with the level of education and the income level. The housing characteristics is the second category, including size, price, age and the quality/design and the tenure of available housing play. Neighbourhood characteristics and accessibility is the third category, which refers to the proximity to work, amenities, greenery, accessibility by public transport, space for housing, a safe environment for children and the presence of other families in the neighbourhood. The fourth and fifth determinants are social embeddedness and residential history.

3 Methodology and Data

3.1 Research instruments

In order to give an answer to the research question and sub-questions and to be able to reach the research goal of this study, a set of three different sources is used. Literature has already provided information about reasons in general (chapter 2), while the WoON-data can provide more detailed information about the relation between households and the preference for the city centre or districts nearby. However, a shortcoming of the WoON-dataset is the lack of information about the role of a respondent's residential history and the role of social embeddedness, while literature has indicated that these could be very important in the residential location choice (section 2.4). Moreover, family's housing preferences concerning neighbourhoods located in city centre or districts nearby in particular are not discussed extensively (enough). Therefore, a stated preference (SP) method using a self-designed survey is needed in order to draw valid conclusions about residential preferences concerning families and the underlying reasons for these preferences. This will be discussed in the next sections.

3.2 Stated preference (SP) method

Although several methods have been applied in residential location studies, two different methods have been mainly used: the stated preference (SP) method and the revealed preference (RP) method.

The stated preference (SP) method is a method based on people's expressed preferences and choices (Timmermans et al., 1994). It uses surveys to ask respondents to rank or judge certain attributes (Adamowicz et al., 1994), for example in terms of housing and neighbourhood, according to their own preferences (Van de Vyvere, 1994). Together with measuring the relative importance of each attribute, residential preferences can be estimated (Timmermans et al., 1994). The revealed preference (RP) method is a method based on observed housing choices in real markets (Timmermans et al., 1994), meaning that real-world data are used (Van de Vyvere, 1994). These data are assumed to reflect people's preferences "*based on the assumption that it is only in the act of choice that people can reveal their preferences*" (Timmermans et al., 1994: 216).

However, the revealed preference (RP) method does not emphasize the residential preferences, because this method only considers actual choices, which only partially reflect people's residential preferences (Van de Vyvere, 1994). Furthermore, the residential location

choice is based on current market conditions, meaning that the availability and affordability of housing can have an influence on the location where people move to. Due to the fact that the revealed preference (RP) method is based on residential behaviour in real markets (real-world data), the problem arises that *"it is very difficult, if not impossible, to disentangle preference from disequilibrium conditions in the marketplace"* (Timmermans et al., 1994: 218). In other words, it is hard to find out whether these housing preferences would be the same under different market conditions. Besides that, it often happens that there are strong correlations between explanatory variables (Kroes & Sheldon, 1988), meaning that there is a possibility that the parameters are incorrectly estimated. Finally, it can also be difficult to examine all variables when there is no sufficient variation in the data (Kroes & Sheldon, 1988).

Due to these weaknesses, there has been chosen for the stated preference (SP) method, implying relevant data will be derived from a self-designed survey. This method is more flexible, as residential preferences and importance weights can be measured by asking straightforward questions, using the same scales (Timmermans et al., 1994). Furthermore, since the researcher controls the complete procedure of modelling, the goodness-of-fit statistics of stated preference models are relatively high, thereby improving the internal validity[9] (Van de Vyvere, 1994).

On the other hand, the internal validity can also be affected in a negative way due to the so-called 'social desirability response bias' (Huang et al., 1998). This means that respondents have a tendency to pretend to be a better person; to present a favourable image of themselves (Johnson & Fendrich, 2002). This occurs most often when the respondent has to answer socially sensitive questions (Kind & Bruner, 2000), for example questions about the income level of about the level of education. This problem concerning the external validity can be solved when an appropriate sample can be selected, for which residential behaviour will exist and be measurable, such as a list of individuals willing to move within a short period of time (Van de Vyvere, 1994). In order to solve this problem and improve the external validity, one of the criteria in the survey is that the respondent must prefer to relocate within 10 years. If not, that particular respondent will be screened-out.

A social desirability response bias has again negative implications for the external validity[10], as *'it is not clear to what extent their results are useful in understanding, describing, and predicting choices made in the real world'* (Horowitz & Louviere, 1990: 248). This has been solved by adding answer options such as 'I do not want to say' to questions about the income

[9] The possibility to determine whether there is a causal direction from the resulting data (Bryman, 2012).
[10] The quality of the method of selecting the sample and therefore about the possibility to generalize the findings (Bryman, 2012).

level and the level of education, in order to prevent respondents giving socially desirable answers. Another difficulty is the reliability[11] of the stated preference (SP) method, as it is based on hypothetical situations. Respondents are asked to evaluate different (housing) attributes one by one (Timmermans et al., 1994), while in real life other attributes could influence the residential location choice behaviour as well.

In order to determine which municipalities are appropriate as study area for the self-designed survey, WoON-data from 2015 have been analysed in order to find out where family-households who are willing to live in an urban living environment are currently living. This has been done by analysing data of respondents' residential location in terms of the degree of urbanity and in terms of the number of inhabitants.

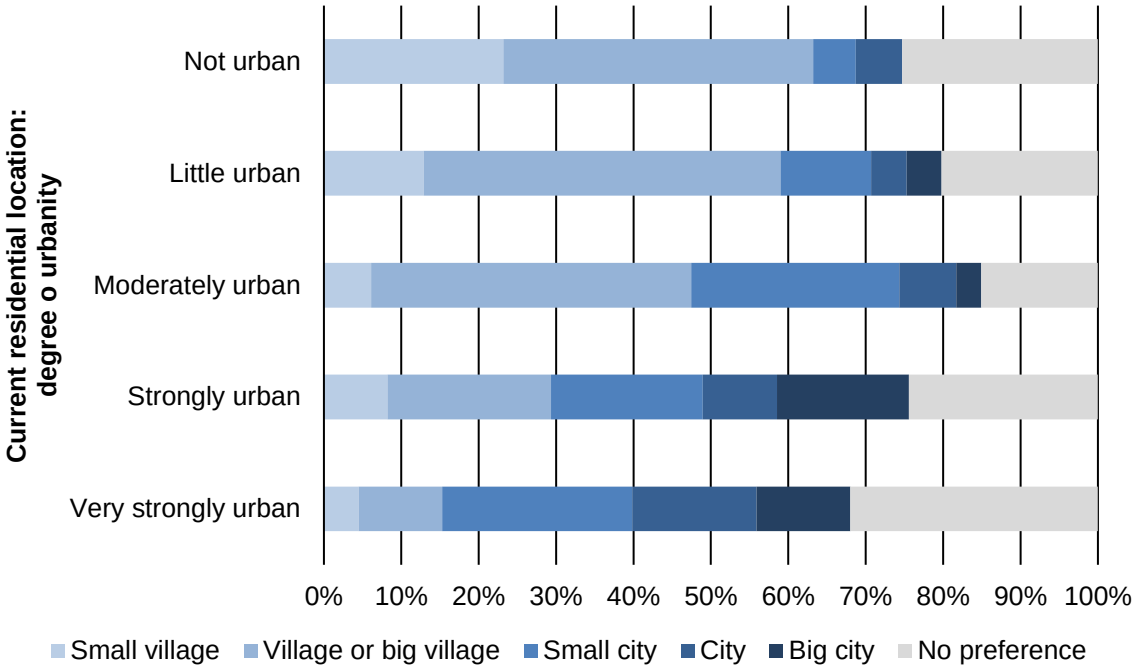
3.3 Self-designed survey

Although the target group for the survey is clear (family-households with children), it is necessary to determine the study area for the survey as well. WoON-data from 2015 have been analysed in order to find out where family-households who are willing to live in an urban living environment are currently living.
As shown in the figures below, the preference to live in a city (small, medium or big) increases with the degree of urbanity (figure 3) and increases relatively with the number of inhabitants (figure 4). If families are living in a more rural living area or in an area with a relatively low number of inhabitants, they prefer mainly to live in a village and hardly prefer to live in an urban living environment or in areas with more inhabitants.

The expectation is that the majority of families willing to live in a city are currently located in the more urban living environments. Therefore, there has been chosen for families living in municipalities which have a city centre urban environment according to a definition by ABF Research (2009), in order to improve the generalizability of this research.
First, all municipalities have been selected which had more than 100,000 inhabitants on December 31 of 2017. Of these 31 municipalities, the ones have been selected which have a centre-urban-plus or centre-urban living environment according to the classification of the 13-point scale (appendix A). After this selection procedure, 29 municipalities are left (appendix B). The respondents can be both living in the city centre, in districts nearby or in the suburbs, making it possible to find out the reasons why people would prefer to live in the city centre or not.

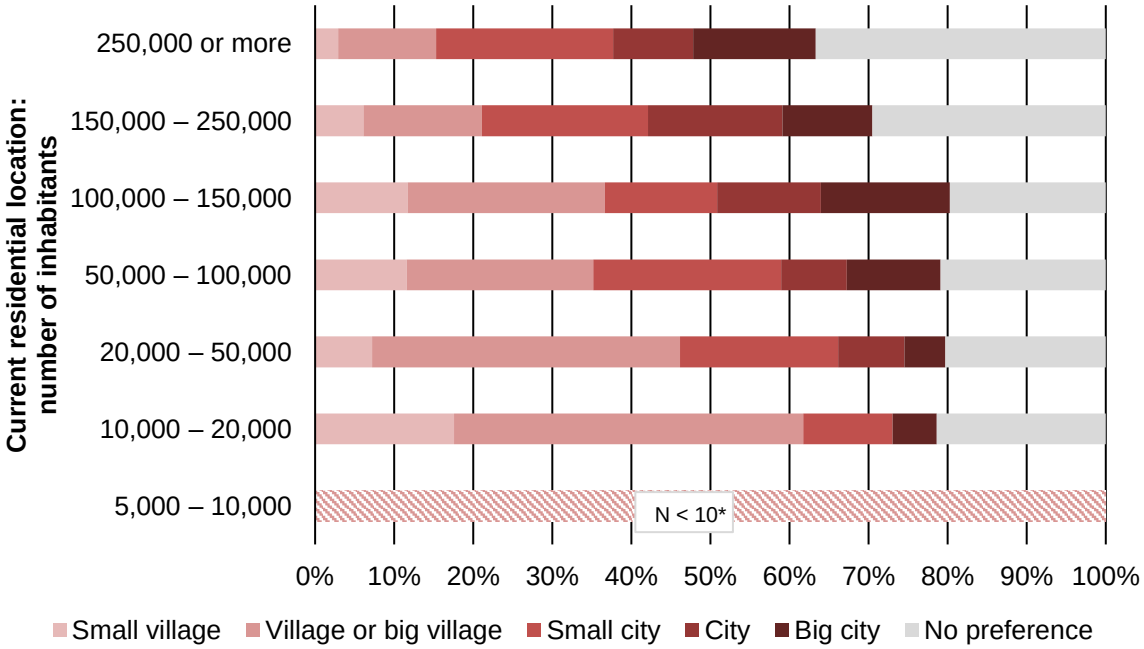
[11] The consistency of a measure of a concept (Bryman, 2012: 169)

Figure 3. Preferences in terms of residential location type, analysed by the degree of urbanity of the current residential location



Source: Cremers & Van Engelen (2016); edited by author (2019)

Figure 4. Preferences in terms of residential location type, analysed by the number of inhabitants in the current residential location



** N < 10 = results are not reliable*

Source: Cremers & Van Engelen (2016); edited by author (2019)

Outline of the survey

The first section consists partially of selection questions. Certain answers result in a so-called 'screen-out', meaning that they are not able to continue with filling out the survey as they do not meet the requirements to participate in this study. The criteria used in order to determine whether or not a respondent is eligible for the survey (Salkind, 2010) can be observed in table 3. The other questions in the first section are about characteristics of the respondent him-/herself.

Table 3. Inclusion and exclusion criteria for survey

Inclusion criteria	Exclusion criteria
• Respondent is living in one of the 29 selected municipalities • Respondent has children aged between 0 and 18 years old, living at home • Respondent is willing to move within 10 years	• Respondent is not living in one of the 29 selected municipalities • Respondent does not have children • Respondent's children are older than 18 years old • Respondent's children are not living at home • Respondent is not willing to move at all • Respondent has already found a new home, is only willing to move in more than 10 years or does not know

Source: Author (2019)

The second section consists of questions about the residential preferences of the respondent. The routing depends on answers filled out by the respondent. Four types of routing can be distinguished, based on the preference to move to an urban living environment or another type of living environment and based on the preference for a multi-family home or a single-family home. Questions are asked about why respondents prefer a certain living environment and why they do not prefer other types. Furthermore, respondents preferring multi-family housing have to answer questions about the multi-family home, the building and the surroundings of the building. Respondents preferring single family-housing have to indicate which aspects of the multi-family home would convince them to move to this type of housing. The survey can be seen in appendix C.

3.4 Methodology

In this research, it is the goal to find out which type(s) of families prefer the city centre or districts nearby instead of other living environments as a place to live, and why, based on empirical research. Therefore, the dependent variable (Y) is the preference for an urban living environment. Due to the fact that this is not a continuous variable, a linear regression is not possible. Therefore, as the choice between *urban* and *non-urban* can be considered as a binary variable (there are only two options), there has been chosen for a logistic regression.

By using a logistic regression, one is able to compare the results of this empirical research to literature outcomes describe and to describe relationships between a binary variable and one or more categorical or continuous independent variables (Peng et al., 2002). According to Statistics Solutions (2018), a logistic regression has a number of assumptions:

1. The dependent variable has to be binary
2. The observations have to be independent of each other (they should not come from repeated measurements)
3. Little or no multicollinearity among the independent variables is required
4. The requirement that the independent variables are linearly related to the log odds
5. A large sample size is required

Although none of the assumptions of a logistic regression was violated (appendix D), not all variables mentioned in section 2.4 could be included in the regression model. Some of the independent variables were derived from questions or statements which were only answered by one of the two groups, instead of both. Therefore, these independent variables[12] are not included in the model, in order to keep only independent variables which were based on questions answered by both (*urban* and *non-urban*) groups. The model shows the chance that a family-household has a preference for *urban* living (P_{urban}) relative to a preference for *non-urban living* ($P_{non\text{-}urban}$)[13]. The following regression model is:

$$\text{Logit}(p) = \beta_0 + \beta_1 \text{Age} + \beta_2 Aoc + \beta_3 Child + \beta_4 Hh + \beta_5 Inc + \beta_6 Edu + \beta_7 His + \beta_8 Soc + \beta_9 Work + \beta_{10} Size + \beta_{11} Green + \epsilon \quad (1)$$

Where:

β_0	=	Constant
$\beta_1 - \beta_{11}$	=	Regression coefficients
Age	=	Respondent's age in years
Aoc	=	Age of the oldest child
Child	=	Number of children
Hh	=	Household composition
Inc	=	Income level of respondent and partner (if applicable)
Edu	=	Highest completed level of education by the respondent

[12] The variables *Amenities* (proximity to school, childcare, daily shops, non-daily shops, playgrounds for children, sport- and leisure facilities, cultural services, catering industry, medical services)*, Accessibility (*proximity to bus/metro/tram station and proximity to train station), *Safety (*safety of the neighbourhood, traffic safety) and *Family* (the presence of other families in the neighbourhood) are not included.

[13] Respondents had to choose one of the five preferred living environments, there was no "no preference" option.

His	=	Residential history of a respondent
Soc	=	Social embeddedness; important of the proximity to family/friends
Work	=	Importance of the proximity to work
Size	=	Preferred housing size
Green	=	Importance of the proximity to greenery
ϵ	=	Error term

where β_0 represents a constant; *Age* indicates the respondent's age in years and is changed from a continuous variable into a categorical variable and therefore transformed into a dummy variable; *Aoc* refers to the age of the oldest child and is due to its categories (0-5, 6-12, 13-18) transformed into dummy variables; *Child* is a continuous variable and is measured as the total number of children; *Hh* refers to the household composition only two options[14]: a couple with children or a single-parent family with children; *Inc* is the income level of the respondent (including the income of the partner, if applicable) and is due to its 9 categories transformed into dummy variables; *Edu* represents the highest complete level of education by the respondent and is transformed into dummy variables as well; *His* refers to the residential history of a respondent (in which living environment has the respondent lived during the childhood) and has only two options (*urban* or *non-urban*); *Soc* refers to social embeddedness and is measured by the importance of the proximity to family, friends and acquaintances on a scale from very unimportant to very important; *Work* refers to the importance of the proximity to work and is measured on the same scale; *Size* indicates the preferred housing size and was transformed into a dummy variable; *Green* refers to the proximity to greenery, both measured by using a Likert scale: very unimportant, unimportant and neutral are classified as 'unimportant' and important and very important are classified as 'important'; and ϵ represents the error term.

Chi-Square test

Besides a logistic regression, Chi-Square is used in order to *"test whether respondents' answers within the same group or scheme are significantly different …"* (Djebarni & Al-Abed, 2000: 236). Chi-Square is used by Lane & Kinsey (1980), who analysed whether there were significant differences in housing satisfaction between groups living in different types of dwellings and with different tenure. Djebarni & Al-Abed (2000) used Chi-Square *"to determine whether the satisfaction differences between the three housing schemes is significant or not …"* (Djebarni & Al-Abed, 2000: 236). The Chi-Squares can be observed in tables 7 up to 12 (section 3.7).

[14] Although normally there would be more types of household composition possible, these were already not selected as participants for the survey or they were screened-out.

The formula for calculating a Chi-Square is (McHugh, 2013):

$$\sum\chi^2_{i-j} = \frac{(O-E)^2}{E} \quad (2)$$

Where:

O = Observed (actual count of cases in each cell of the table)

E = Expected value (estimate of how the cases would be distributed if there were no effect)

$\sum\chi^2_{i-j}$ = Sum of all the cell Chi-Square values, from the first cell (i) to the last cell (j)

The first step to calculate the Chi-Square is to calculate the sum of each row and the sum of each column, called “marginal” (McHugh, 2013). Secondly, the expected values for each cell have to be calculated by using the following formula (McHugh, 2013):

$$E = \frac{M_R \times M_C}{n} \quad (3)$$

Where:

E = Expected value

M_R = Row marginal for that particular cell

M_c = Column marginal for that particular cell

n = Total sample size

After calculating the expected values, the third step is to calculate the cell χ^2 values by using the following formula (McHugh, 2013):

$$\chi^2 = \frac{(O-E)^2}{E} \quad (4)$$

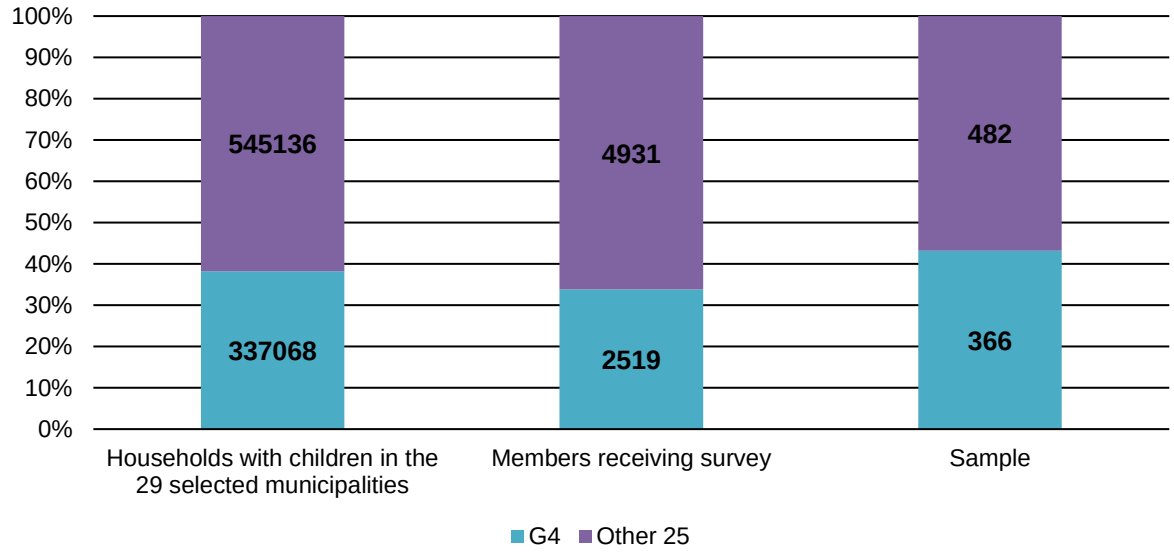
The final step is to sum the cell χ^2 values to obtain the χ^2 statistic for the table (equation 2).

3.5 Data

In the first week of December 2018, the questionnaire was sent by email to 7,450 members of PanelClix[15]. Of them, 1881 started with filling out the survey and 848 of them met the criteria. Because this research focuses on the residential preferences of families with children currently living in a municipality with more than 100,000 inhabitants, households without children or living in (very) small municipalities are irrelevant. Therefore, these 1033 respondents had to be screened-out. The fact that only a selection of certain types of families is qualified to participate can be considered as a selective response. This could have implications for the outcomes of the research, as there is a probability that the outcomes of the survey would have been different when screened-out families would have been qualified to participate. In other words, selecting only a certain group of families could potentially result in biased estimates.

As observable in figure 5, for all members which have received the survey and for all respondents in the sample, the share of both groups (G4 and other 25 municipalities) corresponds to the total population of households with children (29 municipalities) according to CBS (2018b). Therefore, it can be considered as a representative sample.

Figure 5. Share of families living in the G4-municipalities and in the other 25 municipalities



Source: CBS (2018b); Author (2019)

Most of the families (63.1%) have a preference to move to a non-urban living environment. The other families (36.9%) prefer to move to an urban living environment: the city centre or districts nearby. Families most often prefer to move to the city centre due to the rush and

[15] PanelClix is market research company specialized in online fieldwork, managing several panels in the Netherlands, Germany, Belgium and France in order to conduct online field surveys for a large number of fieldwork bureaus and agencies (PanelClix, 2018).

sociability (27%) and the proximity to amenities (25%)[16]. Also many of them have a preference for the city centre because they consider it as nice, pleasant and/or beautiful (17%). The preference for districts nearby the city centre is mainly based on the proximity to amenities (21%). The suburbs are most often preferred due to the combination of amenities nearby and being in a (relatively) quiet area with more nature and space than in the city centre or its surrounding districts (31%). Others mainly prefer the suburbs due to the proximity to amenities (29%). Families mainly prefer a village and a rural area because it is quiet with nature and space (appendix E).

Table 4 shows the descriptive statistics in terms of socio-demographic variables. The respondents have on average 1.92 children still living at home and aged up to 18 years old. Most of the respondents are aged between 36 and 45 years old, have a partner (80.8%) and have a 'HAVO/VWO/MBO' level of education (45.9%). In terms of the age of the oldest child, all categories are equally distributed. While only 44.4% of the families with an urban preference have an income higher than €38,500, this is 55.1% for the families with a non-urban preference. Residential history has clearly an influence on the preference for a certain living environment. Families with an urban preference were mainly living in the same living environment during their childhood (68.4%) and vice versa for the non-urban group (70.1%).

[16] See appendix E.

Table 4. Descriptive statistics: socio-demographic variables

Sociodemographic variables	TOTAL		*Urban*		*Non-urban*	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Number of children	1.92	0.855	1.98	0.914	1.89	0.817
	N	**%**	**N**	**%**	**N**	**%**
Age						
25 or younger	37	4.4	13	4.2	24	4.5
26-35	274	32.3	121	38.7	153	28.6
36-45	335	39.5	110	35.1	225	42.1
46-55	167	19.7	58	18.5	109	20.4
56 or older	35	4.1	11	3.5	24	4.5
Age oldest child						
0-5	281	33.1	113	36.1	168	31.4
6-12	301	35.5	109	34.8	192	35.9
13-18	266	31.4	91	29.1	175	32.7
Household composition						
Couple with child(ren)	685	80.8	236	75.4	449	83.9
Single-parent family	163	19.2	77	24.6	86	16.1
Income						
I do not want to say/no answer	86	10.1	28	8.9	58	10.8
I do not know	30	3.5	15	4.8	15	2.8
Less than €34,500	187	22.1	81	25.9	106	19.8
€34,500 - €38,500	111	13.1	50	16.0	61	11.4
€38,500 - €44,500	95	11.2	27	8.6	68	12.7
€44,500 - €52,500	99	11.7	32	10.2	67	12.5
€52,500 - €70,000	122	14.4	40	12.8	82	15.3
€70,000 - €100,000	72	8.5	23	7.3	49	9.2
More than €100,000	46	5.4	17	5.4	29	5.4
Education						
I do not want to say	5	0.6	1	0.3	4	0.7
Primary school	9	1.1	7	2.2	2	0.4
MAVO / LBO	92	10.8	43	13.7	49	9.2
HAVO / VWO / MBO	389	45.9	132	42.2	257	48.0
HBO / University	353	41.6	130	41.5	223	41.7
Residential history						
Urban	374	44.1	214	68.4	160	29.9
Non-urban	474	55.9	99	31.6	375	70.1
Observations	848		313		535	

Source: Author (2019)

Table 5 shows the descriptive statistics of the attitudinal variables derived from questions that both groups (*urban* and *non-urban*) have answered. Families most often prefer a housing size between 125 and 150 square meters. Social embeddedness is more often important for families with an urban preference (54.6%). Both groups consider proximity to work, playgrounds and greenery as an important factor when relocating.

Table 5. Descriptive statistics: attitudinal variables – I

Attitudinal variables	TOTAL		*Urban*		*Non-urban*	
	N	%	N	%	N	%
Proximity to family/friends						
Unimportant	433	51.1	142	45.4	291	54.4
Important	415	48.9	171	54.6	244	45.6
Proximity to work						
Unimportant	392	46.2	125	39.9	267	49.9
Important	456	53.8	188	60.1	268	50.1
Preferred housing size						
75 - 100 m2	135	15.9	62	19.8	73	13.6
100 - 125 m2	208	24.5	78	24.9	130	24.3
125 - 150 m2	226	26.7	85	27.2	141	26.4
150 - 175 m2	146	17.2	52	16.6	94	17.6
175 - 200 m2	85	10.0	28	8.9	57	10.7
More than 200 m2	48	5.7	8	2.6	40	7.5
Proximity to greenery						
Unimportant	264	31.1	113	36.1	151	28.2
Important	584	68.9	200	63.9	384	71.8
Observations	848		313		535	

Source: Author (2019)

Table 6 shows the descriptive statistics of the attitudinal variables derived from questions that only one of the two groups has answered (and therefore not included in the regression model). For families with a preference for an urban living environment, school, daily-shops, medical services, bus/metro/tram station and train station are for the majority clearly important factors when relocating. Childcare, cultural services and events are more often seen as unimportant factors for families with an urban preference when relocating. Others are neither important nor unimportant.

The safety of the neighbourhood is for 90 percent of the families with a non-urban preference an important determinant when choosing a new neighbourhood. Traffic safety (67.5%) and the presence of other families in the neighbourhood (61.1%) are also important, but to a lesser extent.

Table 6. Descriptive statistics: attitudinal variables – II

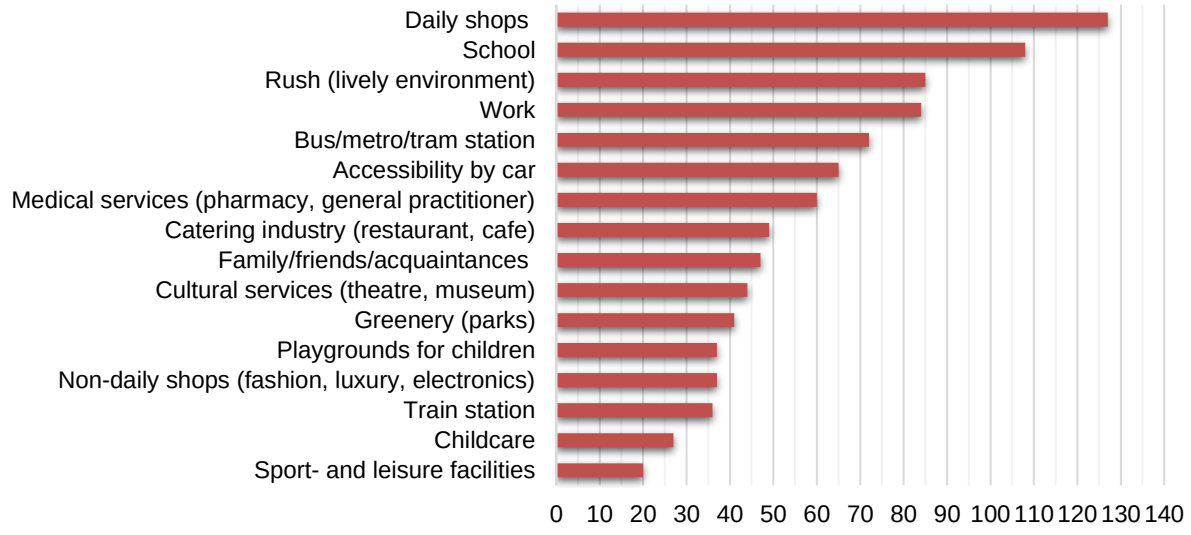
Attitudinal variables *Urban preference (N = 313)*	**Unimportant**		**Important**	
	N	**%**	**N**	**%**
Proximity to school	93	29.7	220	70.3
Proximity to childcare	165	52.7	148	47.3
Proximity to daily shops	61	19.5	252	80.5
Proximity to non-daily shops	169	54.0	144	46.0
Proximity to sport- & leisure facilities	152	48.6	161	51.4
Proximity to cultural services	168	53.7	145	46.3
Proximity to catering industry	152	48.6	161	51.4
Proximity to medical services	85	27.2	228	72.8
Events	184	58.8	128	41.2
Proximity to bus/metro/tram station	98	31.3	215	68.7
Proximity to train station	128	40.9	185	59.1
Attitudinal variables *Non-urban preference (N = 535)*	**Unimportant**		**Important**	
	N	**%**	**N**	**%**
Traffic safety	174	32.5	361	67.5
Safety of the neighbourhood	57	10.7	478	89.3
Presence of other families in the neighbourhood	208	38.9	327	61.1

Source: Author (2019)

3.6 Neighbourhood preferences

In section 3.5 was explained to what extent families consider factors as important when choosing a new residential location. This raises the question which factors are really considered as the most important factors when choosing a certain location. Figure 6 shows that the proximity to daily shops, school, the rush of the city and the proximity to work are most often indicated as important factors when choosing for an urban living environment.

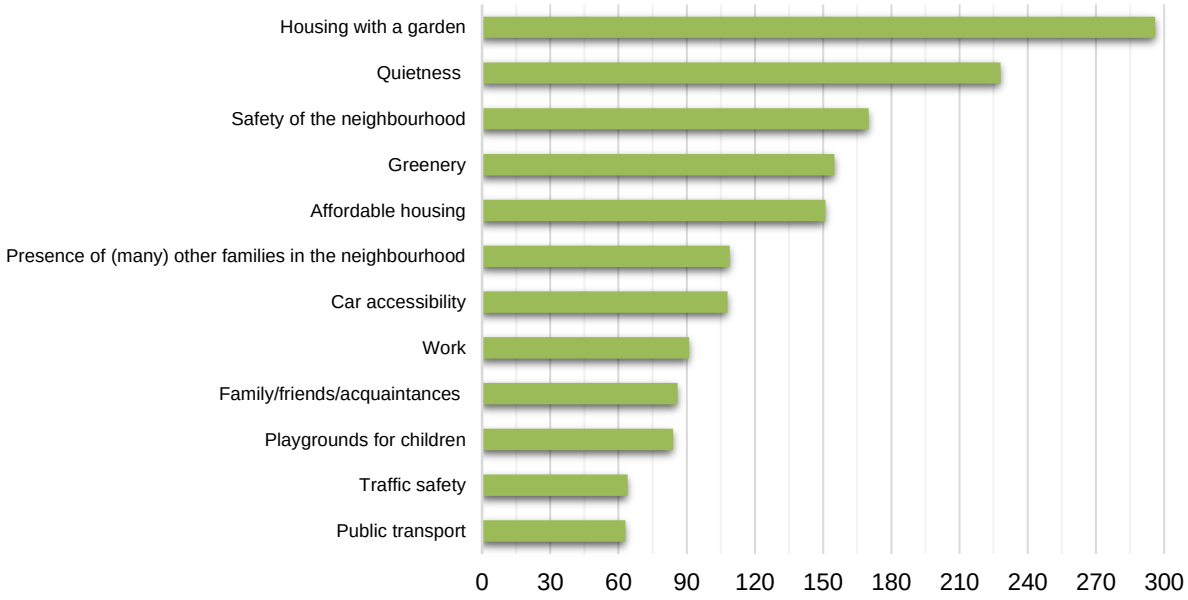
Figure 6. Most important reasons for an urban preference



Source: Author (2019)

Figure 7 shows that housing with a garden, quietness, the safety of the neighbourhood and the proximity to greenery are most often indicated as important factors when choosing for a non-urban living environment.

Figure 7. Most important reasons for a non-urban preference



Source: Author (2019)

Why not another living environment?

The lack of (enough) amenities, too long travel time and a lack of rush as usual in the city were mentioned most often as reasons for not choosing a non-urban living environment. Too busy, too expensive housing and poor accessibility by car, as well as the shortage of greenery and housing with gardens are often mentioned as reasons for not choosing an urban living environment (appendix F).

3.7 Housing preferences

In terms of housing preferences, table 7 shows that urban-oriented families mainly prefer newly-built housing, while the non-urban group most often has no preference. These differences are highly significant according to the Chi-Square, as explained in section 3.4. A much higher percentage of the non-urban group prefers owner-occupancy (69.7%) than the percentage for the urban-group (52.1%), while social housing is more often preferred by the urban-oriented group compared to the non-urban group. Both differences are highly significant. Concerning the preferred housing type, the apartment, gallery flat / portico flat and the maisonette have higher percentages for the urban-oriented group, while single-family housing

has a higher percentage for the non-urban group. These differences are all highly significant. The preferred purchase price does not show any significant differences between both groups.

Table 7. Housing preferences – Urban and non-urban group

Residential variables	TOTAL		*Urban*		*Non-urban*		Statistical test	
	N	%	N	%	N	%	Chi²	p-value
Preferred housing age								
Existing housing	263	31.0	93	29.7	170	31.8	.393	.531
Newly-built housing	254	30.0	119	38.0	135	25.2	15.385**	.000
No preference	331	39.0	101	32.3	230	43.0	9.540**	.002
Preferred tenure								
Owner-occupied	536	63.2	163	52.1	373	69.7	26.431**	.000
Private-rental	104	12.3	47	15.0	57	10.7	3.492	.062
Social-rental	208	24.5	103	32.9	105	19.6	18.816**	.000
Preferred housing type								
Apartment	115	13.6	76	24.3	39	7.3	48.635**	.000
Gallery flat / portico flat	15	1.8	13	4.2	2	0.4	16.234**	.000
Ground floor -/ overhead apartment	55	6.5	27	8.6	28	5.2	3.747	.053
Maisonette	43	5.1	24	7.7	19	3.6	6.951**	.008
Single-family housing	610	71.9	170	54.3	440	82.2	76.300**	.000
Other	10	1.2	3	1.0	7	1.3	.208	.649
Observations	848		313		535			
Preferred purchase price								
Less than €150,000	16	3.0	7	4.3	9	2.4	1.387	.239
€150,000 to €250,000	151	28.2	47	28.8	104	27.9	.051	.822
€250,000 to €350,000	191	35.6	60	36.8	131	35.1	.141	.707
€350,000 to €450,000	101	18.8	25	15.3	76	20.4	1.883	.170
€450,000 to €550,000	40	7.5	11	6.7	29	7.8	.173	.677
€550,000 to €650,000	22	4.1	9	5.5	13	3.5	1.195	.274
€650,000 to €750,000	9	1.7	2	1.2	7	1.9	.290	.590
More than €750,000	6	1.1	2	1.2	4	1.1	.024	.876
Observations	536		163		373			

** p < .05 ; ** p < .01*

Source: Author (2019)

Besides comparing between the urban and non-urban group, differences in preferences could also exist between G4-families and G25-families, as explained in section 2.4. First of all, while 42.3% of the G4-families have an urban preference, this is only 32.8% for G25-families. Concerning general housing preferences (table 8), G4-families prefer more often newly-built housing, while G25-families prefer existing housing, and both differences are highly significant. G4-families prefer rental housing, while G25-families prefer owner-occupied housing, and these differences are highly significant as well. Multi-family housing is more often preferred by G4-families and single-family housing more often by G25-families and these differences are

(highly) significant. G4-families more often prefer small housing (75-100m²), while G25-families prefer more often large housing (>200m²), and G4-families more often prefer a purchase price lower than €150,000. Also these differences between both groups are significant.

Table 8. Descriptive statistics: housing preferences – G4 and other 25 municipalities

Residential preferences	TOTAL		*G4*		*Other (25) municipalities*		Statistical test	
	N	%	N	%	N	%	Chi²	p-value
Preferred housing age								
Existing housing	263	31.0	90	24.6	173	35.9	12.420**	.000
Newly-built housing	254	30.0	136	37.2	118	24.5	15.935**	.000
No preference	331	39.0	140	38.3	191	39.6	.165	.684
Preferred tenure								
Owner-occupied	536	63.2	196	53.6	340	70.5	25.815**	.000
Private-rental	104	12.3	60	16.4	44	9.1	10.204**	.001
Social-rental	208	24.5	110	30.1	98	20.3	10.623**	.001
Preferred housing type								
Apartment	115	13.6	73	19.9	42	8.7	22.388**	.000
Gallery flat / portico flat	15	1.8	11	3.0	4	0.8	5.667*	.017
Ground floor -/ overhead apartment	55	6.5	43	11.7	12	2.5	29.405**	.000
Maisonette	43	5.1	31	8.5	12	2.5	15.456**	.000
Single-family housing	610	71.9	203	55.5	407	84.4	86.512**	.000
Other	10	1.2	5	1.4	5	1.0	.193	.660
Preferred housing size								
75 - 100 m2	135	15.9	79	21.6	56	11.6	15.438**	.000
100 - 125 m2	208	24.5	99	27.0	109	22.6	2.210	.137
125 - 150 m2	226	26.7	84	23.0	142	29.5	4.510*	.034
150 - 175 m2	146	17.2	63	17.2	83	17.2	.000	.998
175 - 200 m2	85	10.0	29	7.9	56	11.6	3.149	.076
More than 200 m2	48	5.7	12	3.3	36	7.5	6.840**	.009
Observations	848		366		482			
Preferred purchase price								
Less than €150,000	16	3.0	12	6.1	4	1.2	10.502**	.001
€150,000 to €250,000	151	28.2	47	24.0	104	30.6	2.683	.101
€250,000 to €350,000	191	35.6	60	30.6	131	38.5	3.398	.065
€350,000 to €450,000	101	18.8	40	20.4	61	17.9	.495	.482
€450,000 to €550,000	40	7.5	20	10.2	20	5.9	3.363	.067
€550,000 to €650,000	22	4.1	10	5.1	12	3.5	.781	.377
€650,000 to €750,000	9	1.7	5	2.6	4	1.2	1.423	.233
More than €750,000	6	1.1	2	1.0	4	1.2	.027	.869
Observations	536		196		340			

** p < .05 ; ** p < .01*

Source: Author (2019)

Preferences: multi-family home

In terms of residential preferences concerning the multi-family home (table 9), a private roof terrace, high ceilings and large hallways are more often considered as important by the urban-oriented group and the differences with the non-urban group are (highly) significant. The private garden is more often considered as important by the non-urban group compared to the urban-group and this difference is significant as well. The question *"Which two of the following aspects are most important in the multi-family home?"* shows clear answers: a bedroom for

each child and a private garden are by far the two most important aspects in the multi-family home. Also an extra toilet and an extra room are mentioned relatively often (appendix G).

Table 9. Multi-family home preferences – Urban and non-urban group

Residential preferences *Multi-family home*	**TOTAL**		***Urban***		***Non-urban***		**Statistical test**	
	N	**%**	**N**	**%**	**N**	**%**	**Chi²**	**p-value**
Bedroom for each child							.557	.455
Unimportant	98	16.9	39	15.5	59	17.9		
Important	483	83.1	212	84.5	271	82.1		
Storage room							.692	.405
Unimportant	161	27.7	74	29.5	87	26.4		
Important	420	72.3	177	70.5	243	73.6		
Extra toilet							.013	.908
Unimportant	284	48.9	122	48.6	162	49.1		
Important	297	51.1	129	51.4	168	50.9		
Extra shower							.153	.696
Unimportant	410	70.6	175	69.7	235	71.2		
Important	171	29.4	76	30.3	95	28.8		
Extra room							2.871	.060
Unimportant	243	41.8	95	37.8	148	44.8		
Important	338	58.2	156	62.2	182	55.2		
Private garden							4.348*	.037
Unimportant	195	33.6	96	38.2	99	30.0		
Important	386	66.4	155	61.8	231	70.0		
Private balcony							5.790*	.016
Unimportant	234	40.3	87	34.7	147	44.5		
Important	347	59.7	164	65.3	183	55.5		
Private roof terrace							6.332*	.012
Unimportant	333	57.3	129	51.4	204	61.8		
Important	248	42.7	122	48.6	126	38.2		
Moveable walls							.337	.562
Unimportant	332	57.1	140	55.8	192	58.2		
Important	249	42.9	111	44.2	138	41.8		
Fold-out furniture							.941	.332
Unimportant	399	68.7	167	66.5	232	70.3		
Important	182	31.3	84	33.5	98	29.7		
High ceilings (3m)							9.331**	.002
Unimportant	398	68.5	155	61.8	243	73.6		
Important	183	31.5	96	38.2	87	26.4		
Large hallways							11.522**	.001
Unimportant	367	63.2	139	55.4	228	69.1		
Important	214	36.8	112	44.6	102	30.9		
Observations	581		251		330			

** p < .05 ; ** p < .01*

Source: Author (2019)

When comparing G4-families to G25-families (table 10), moveable walls, high ceilings and large hallways are more often indicated as important by G4-famiilies and these differences with G25-families are significant. An extra toilet is more often considered as important by G25-families with a significant difference as well.

Table 10. Descriptive statistics: multi-family home – preferences G4 and other 25 municipalities

Residential preferences *Multi-family home*	**TOTAL**		***G4***		***Other (25) municipalities***		**Statistical test**	
	N	**%**	**N**	**%**	**N**	**%**	**Chi²**	**p-value**
Bedroom for each child							.131	.718
Unimportant	98	16.9	51	16.3	47	17.5		
Important	483	83.1	261	83.7	222	82.5		
Storage room							1.966	.161
Unimportant	161	27.7	94	30.1	67	24.9		
Important	420	72.3	218	69.9	202	75.1		
Extra toilet							5.817*	.016
Unimportant	284	48.9	167	53.5	117	43.5		
Important	297	51.1	145	46.5	152	56.5		
Extra shower							.157	.692
Unimportant	410	70.6	218	69.9	192	71.4		
Important	171	29.4	94	30.1	77	28.6		
Extra room							2.564	.109
Unimportant	243	41.8	121	38.8	122	45.5		
Important	338	58.2	191	61.2	147	54.6		
Private garden							.051	.821
Unimportant	195	33.6	106	34.0	89	33.1		
Important	386	66.4	206	66.0	180	66.9		
Private balcony							2.158	.142
Unimportant	234	40.3	117	37.5	117	43.5		
Important	347	59.7	195	62.5	152	56.5		
Private roof terrace							.658	.417
Unimportant	333	57.3	174	55.8	159	59.1		
Important	248	42.7	138	44.2	110	40.9		
Moveable walls							4.267*	.039
Unimportant	332	57.1	166	53.2	166	61.7		
Important	249	42.9	146	46.8	103	38.3		
Fold-out furniture							2.198	.138
Unimportant	399	68.7	206	66.0	193	71.7		
Important	182	31.3	106	34.0	76	28.3		
High ceilings (3m)							8.978**	.003
Unimportant	398	68.5	197	63.1	201	74.7		
Important	183	31.5	115	36.9	68	25.3		
Large hallways							5.899*	.015
Unimportant	367	63.2	183	58.7	184	68.4		
Important	214	36.8	129	41.3	85	31.6		
Observations	581		312		269			

** p < .05 ; ** p < .01*

Source: Author (2019)

Preferences: multi-family building and its surroundings

In terms of the multi-family building and its surroundings (table 11), a big entrance, a shared roof terrace only for residents, a shared bicycle and car parking and bicycle parking on the street are more often considered as important by the urban-group in comparison to the non-urban group, and are all significant. Although there are more differences observable, these are not significant.

Table 11. Multi-family building and its surroundings preferences – Urban and non-urban group

Residential preferences *Multi-family building and its surroundings*	**TOTAL**		***Urban***		***Non-urban***		**Statistical test**	
	N	**%**	**N**	**%**	**N**	**%**	**Chi²**	**p-value**
Big entrance							6.382*	.012
Unimportant	367	63.2	144	57.4	223	67.6		
Important	214	36.8	107	42.6	107	32.4		
Large gallery							1.037	.308
Unimportant	354	60.9	147	58.6	207	62.7		
Important	227	39.1	104	41.4	123	37.3		
Common playground in building							3.115	.078
Unimportant	332	57.1	133	53.0	199	60.3		
Important	249	42.9	118	47.0	131	39.7		
Shared garden only for residents							.121	.727
Unimportant	271	46.6	115	45.8	156	47.3		
Important	310	53.4	136	54.2	174	52.7		
Shared roof terrace only for residents							5.005*	.025
Unimportant	361	62.1	153	57.0	218	66.1		
Important	220	37.9	108	43.0	112	33.9		
Private bicycle parking							.044	.834
Unimportant	261	44.9	114	45.4	147	44.5		
Important	320	55.1	137	54.6	183	55.5		
Shared bicycle parking							16.754**	.000
Unimportant	378	65.1	140	55.8	238	72.1		
Important	203	34.9	111	44.2	92	27.9		
Private car parking							1.404	.236
Unimportant	257	44.2	104	41.4	153	46.4		
Important	324	55.8	147	58.6	177	53.6		
Shared car parking							5.113*	.024
Unimportant	325	55.9	127	50.6	198	60.0		
Important	256	44.1	124	49.4	132	40.0		
Public garden (for everyone)							2.289	.130
Unimportant	390	67.1	160	63.7	230	69.7		
Important	191	32.9	91	36.3	100	30.3		
Large pavement							.023	.880
Unimportant	278	47.8	121	48.2	157	47.6		
Important	303	52.2	130	51.8	173	52.4		
A car-free street							1.581	.209
Unimportant	272	46.8	125	49.8	147	44.5		
Important	309	53.2	126	50.2	183	55.5		
Bicycle parking on the street							5.412*	.020
Unimportant	335	57.7	131	52.2	204	61.8		
Important	246	42.3	120	47.8	126	38.2		
Objects to use as play objects							2.486	.115
Unimportant	375	64,5	153	61.0	222	67.3		
Important	206	35.5	98	39.0	108	32.7		
Observations	581		251		330			

** p < .05 ; ** p < .01*

Source: Author (2019)

Comparing G4-families to G25-families (table 12), a big entrance, large gallery, common playground in the building, shared garden only for residents, shared bicycle and car parking and objects which can be used as play objects are more often important for G4-families than for G25-families and these differences are significant.

Table 12. Descriptive statistics: multi-family building and its surroundings - preferences G4 and other 25 municipalities

Residential preferences *Multi-family building and its surroundings*	**TOTAL**		***G4***		***Other (25) municipalities***		**Statistical test**	
	N	**%**	**N**	**%**	**N**	**%**	**Chi²**	**p-value**
Big entrance							7.694**	.006
Unimportant	367	63.2	181	58.0	186	69.1		
Important	214	36.8	131	42.0	83	30.9		
Large gallery							4.990*	.025
Unimportant	354	60.9	177	56.7	177	65.8		
Important	227	39.1	135	43.3	92	34.2		
Common playground in building							10.514**	.001
Unimportant	332	57.1	159	51.0	173	64.3		
Important	249	42.9	153	49.0	96	35.7		
Shared garden only for residents							4.366*	.037
Unimportant	271	46.6	133	42.6	138	51.3		
Important	310	53.4	179	57.4	131	48.7		
Shared roof terrace only for residents							.695	.405
Unimportant	361	62.1	189	60.6	172	63.9		
Important	220	37.9	123	39.4	97	36.1		
Private bicycle parking							2.710	.100
Unimportant	261	44.9	150	48.1	111	41.3		
Important	320	55.1	162	51.9	158	58.7		
Shared bicycle parking							5.959*	.015
Unimportant	378	65.1	189	60.6	189	70.3		
Important	203	34.9	123	39.4	80	29.7		
Private car parking							1.007	.316
Unimportant	324	55.8	168	53.8	156	58.0		
Important	257	44.2	144	46.2	113	42.0		
Shared car parking							5.139*	.023
Unimportant	325	55.9	161	51.6	164	61.0		
Important	256	44.1	151	48.4	105	39.0		
Public garden (for everyone)							2.230	.135
Unimportant	390	67.1	201	64.4	189	70.3		
Important	191	32.9	111	35.6	80	29.7		
Large pavement							3.534	.060
Unimportant	278	47.8	138	44.2	140	52.0		
Important	303	52.2	174	55.8	129	48.0		
A car-free street							.119	.731
Unimportant	272	46.8	144	46.2	128	47.6		
Important	309	53.2	168	53.8	141	52.4		
Bicycle parking on the street							3.367	.067
Unimportant	335	57.7	169	54.2	166	61.7		
Important	246	42.3	143	45.8	103	38.3		
Objects to use as play objects							3.915*	.048
Unimportant	375	64.5	190	60.9	185	68.8		
Important	206	35.5	122	39.1	84	31.2		
Observations	581		312		269			

** p < .05 ; ** p < .01*

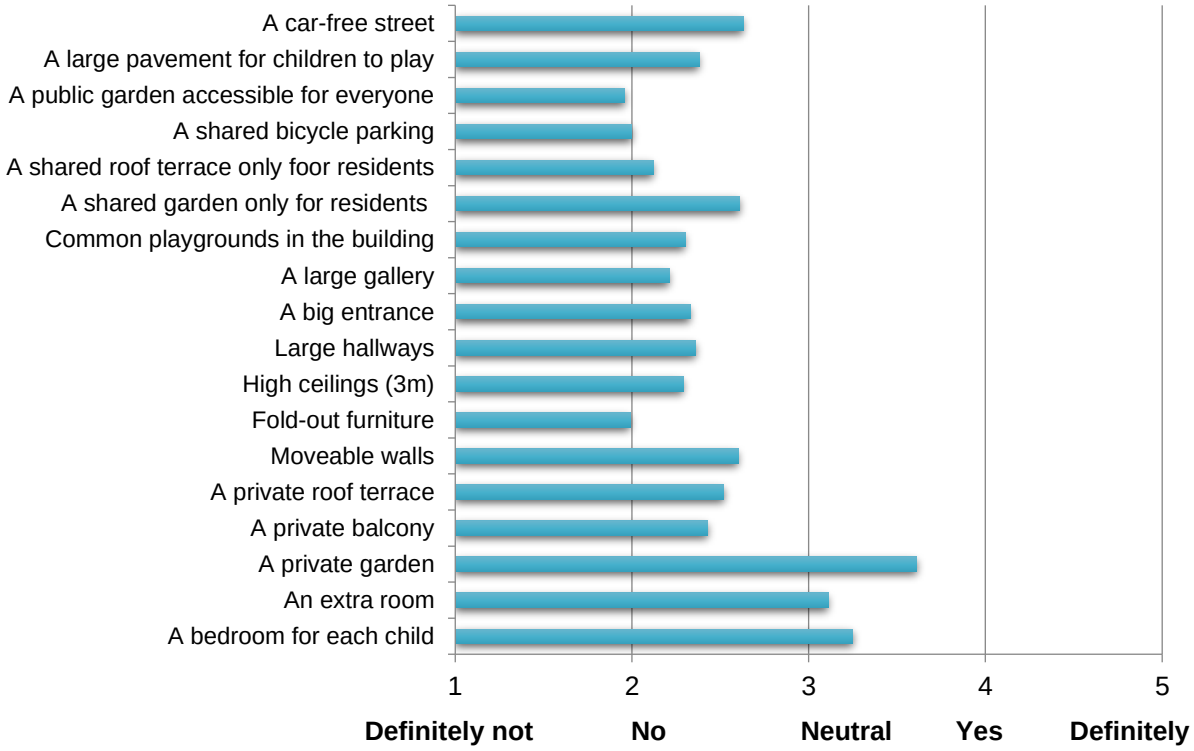
Source: Author (2019)

Alternative for single-family housing

Even though the previous results have given an indication about the housing preferences concerning multi-family housing, it does not indicate why people currently preferring a single-family home have not chosen for a multi-family home.

Figure 8 shows that if multi-family housing in an urban living environment would have a private garden, families with a first preference for single-family housing would consider to choose for this alternative. Also an extra room and at least one bedroom for each child could make multi-family housing more tempting. In another way, one could say that a lack of a private garden, an extra room and not having a bedroom for each child could be considered as push factors of multi-family housing and therefore as pull factors for single-family housing.

Figure 8. Would you consider multi-family housing as an alternative for single-family housing when the following aspects would be present in multi-family housing?



Source: Author (2019)

4 Results

4.1 Results of logistic regression

First of all, the logistic regression model is statistically significant, as the chi-square is highly significant with $p < .001$ (table 13). This indicates that the model fits better than a model with only a constant. The Nagelkerke R-square is equal to .261, which indicates that 26.1% of the variance in having a preference for an urban living environment can be explained by the model. Of all cases, 72.1% is correctly predicted.

Age (oldest child) and the number of children

Rossi (1955) argued that residential mobility could be *"explained in terms of individual efforts to satisfy housing needs brought about by life-cycle changes"* (McAuly & Nutty, 1982). A change in the household size, (Flambard, 2017; Pattaroni et al., 2009; Karsten, 2007; Brown & Moore, 1970), such as childbirth (Boterman et al., 2010; Clark & Huang, 2003; Feijten & Mulder, 2002) or a change in age of the parents and/or children (Flambard, 2017; Deurloo et al., 1986) could result in a need for more physical space, which can be found in the suburbs. However, the variables *Age, Age oldest child* and *Number of children* are all insignificant and therefore do not show a relationship with the preference for an urban living environment.

Household composition

Silverman (2007) stated that single-parent families are more likely to move to the city centre because it provides more opportunities to meet new partners or friends. This relationship is also shown by the empirical results, as the variable *Household – Single-parent family* is statistically significant and positive, meaning that the odds of having a preference for an urban living environment is greater for single-parent families compared to couples with children.

Income level

Kendig (1984) stated that the life-cycle influences residential mobility because it is usually associated with economic resources. Income is one of these economic aspects which influences the residential choice (Flambard, 2017) and according to Deurloo et al. (1986), income is even seen as the principal factor in residential location choice. Varady (1990) stated that higher-income families are better able to afford the costs of suburban housing. However, the results of the logistic regression do not show any significant relation between the income level and having an urban preference (table 13).

Table 13. Results of logistic regression concerning a non-urban preference (Y=0) and an urban preference (Y=1)

	Model 1	
Variables	**Coefficient (standard error)**	**p-value**
Age		
25 and younger	.926 (.606)	.899
26 – 35	1.630 (.478)	.307
36 – 45	1.062 (.449)	.893
46 – 55	1.356 (.443)	.491
Age oldest child		
0 – 5	.974 (.276)	.924
6 – 12	1.164 (.230)	.507
Number of children	1.179 (.104)	.113
Household		
Single-parent family	1.663* (.229)	.026
Income level		
I do not want to say/no answer	.644 (.489)	.369
Less than €34,500	.604 (.459)	.272
€34,500 – €38,500	.830 (.474)	.695
€38,500 – €44,500	.470 (.491)	.124
€44,500 – €52,500	.476 (.485)	.126
€52,500 – €70,000	.640 (.475)	.347
€70,000 – €100,000	.650 (.509)	.398
More than €100,000	1.206 (.565)	.741
Level of education		
I do not want to say	.207 (1.159)	.174
Primary school	2.905 (.869)	.220
MAVO / LBO	1.524 (.278)	.130
HAVO / VWO / MBO	.751 (.184)	.119
Residential history		
Urban	5.122** (.167)	.000
Social embeddedness		
Important	1.153 (.171)	.404
Proximity to work		
Important	1.538* (.173)	.013
Preferred housing size		
75 – 100 m2	3.417* (.481)	.011
100 – 125 m2	3.297** (.459)	.009
125 – 150 m2	2.972* (.455)	.017
150 – 175 m2	3.012* (.467)	.018
175 – 200 m2	2.289 (.499)	.097
Proximity to greenery		
Unimportant	1.865** (.178)	.000
Constant	.045** (.787)	.000
Observations	848	
-2 Log Likelihood	936.772	
Chi-square (df)	180.005 (29) .000	
Nagelkerke R-square	.261	
% correct	72.1%	

* p < .05 ; ** p < .01

Note: Reference group is respondent is couple with children, non-urban residential history, social embeddedness is unimportant, proximity to work is unimportant and proximity to greenery is important. The other dummy variables have as a reference Y = 0: non-urban preference.

Source: Author (2019)

Level of education

Liao et al. (2015) and Lewis & Baldassare (2010) stated that especially highly-educated people have a higher likelihood of preferring compact development in terms of amenities (Liao et al., 2015; Lewis & Baldassare, 2010), which can be found in the city centre. Besides that, Frenkel et al. (2013) indicated that knowledge workers are looking for urban environments, as they are rich in retail and culture: a high educational level is associated with urban living (Bootsma, 1998). However, the empirical results do not show significant relationships between the level of education and having an urban preference.

Residential history

To refer to residential history, Feijten et al. (2008: 144) indicated that *"Residential experience may influence people to return to places where they (or members of their household) previously lived because they still participate in activities there (activity), or because they may want to be closer to members of their social network (social), or because they know that place and value it in a positive way (awareness)".* Furthermore, Gluszak & Marona (2016) and Varady (1990) indicated that the residential history plays an important role in the residential location choice and that knowing where a certain household moved from is a key factor in the choice between certain living environments.

Empirical results show that these assumptions are correct. The coefficient of *Residential history – Urban* is highly significant. There is a positive relationship between an urban residential history and the preference for an urban living environment, meaning that the odds of having a preference for an urban living environment is greater for people who have mainly lived in an urban living environment during their childhood (0-18) as opposed to people who have mainly lived in a non-urban living environment during their childhood (0-18).

Social embeddedness

Karsten (2007) indicated the desire to belong to certain social circles (and places) advances identity as a category of explanations for residential location, also called: 'social embeddedness'. One could think of cultural consumption (Jean, 2014; Boterman et al., 2010; Fagnani, 1993), a tolerant atmosphere (Goodsell, 2013; Boterman et al., 2010), the proximity to family members (Jean, 2014; Mulder, 2007) or other members of their social network (Jean, 2014; Goodsell, 2013; Feijten et al., 2008), or because it satisfies their lifestyle aspirations (Goodsell, 2013; Kim et al., 2005a). However, empirical results do not show a relationship between the preferred living environment and considering the proximity to family and friends as important (*Social embeddedness - Important*), as the coefficient is insignificant.

Proximity to work

Feijten et al. (2008) stated that people move to the city districts in order to live closer to their work. Kim et al. (2005b) pointed this out as well, by stating that the location and ease of transport accessibility to the workplace are important elements in the selection of a residence. Because the city centre is characterized by a high accessibility due to good public transport facilities (Goodsell, 2013; Karsten & Van Kempen, 2001), the odds of having an urban preference would be greater when the proximity to work would be considered as important. The regression model shows that this is indeed correct. The coefficient of *Proximity to work – Important* is highly significant and shows a positive relationship between considering the proximity to work as important and the preference for an urban living environment.

Preferred housing size

According to Karsten (2007), urban-oriented families have a lifestyle where the proximity of work, amenities, friends and family (Karsten, 2007), together with diversity and "the buzz" are considered as more important than a big house for a lower price in the suburbs (Jean, 2014). Besides that, Bell (168) stated that families will have a non-urban preference, partial due to the fact that they want bigger housing. However, empirical results show that the odds of having a preference for an urban living environment is greater for people who prefer housing between 75 and 175 square metres. This is not in line with a preference for smaller housing, as expected by Karsten (2007). The coefficient for a preferred house between 175 and 200 square metres is insignificant.

Proximity to greenery

Bell (1968) suggested that families would move to the suburbs partial due to the fact that they consider the proximity to greenery as important. This would mean that if greenery would be really considered as important, families would not have an urban preference, or in other words: if greenery would be considered as unimportant, the chance of an urban preference could be greater. The results of the logistic regression show that this is correct. The variable *Proximity to greenery – Unimportant* is highly significant and shows a positive relationship between considering the proximity to greenery as important and the preference for an urban living environment.

4.2 Answering sub-questions

Which type(s) of families prefer the city centre or districts nearby instead of other living environments as a place to live, and why, based on empirical research?

According to the logistic regression (table 13), the odds of having a preference for the city centre or districts nearby are greater when the family is a single-parent family, when the family has an urban residential history, when the family considers the proximity to work as important, when the family prefers a house between 75 and 175 square metres and when the proximity to greenery is considered as unimportant. G4-families have a slightly more often an urban preference (42.3%) than families living in the 25 smaller municipalities (32.8%). The rush and sociability, the proximity to amenities and the beauty of the city were mentioned most as reasons to prefer the city.

Which push and pull factors are at stake for families regarding the single- or multi-family home in the city centre or districts nearby based on empirical research?

Pull factors are newly-built, owner-occupied, single-family housing, with the apartment as clearly the most preferred type of multi-family housing (table 7). Newly-built housing between 75 and 100m² is a pull factor for G4-families, while large, existing housing is a pull factor for G25-families (table 8), and these differences are statistically significant.

A bedroom for each child, a storage room, an extra room, a private garden and a private balcony are pull factors in terms of housing (table 9 and 10), with a bedroom for each child and a private garden as by far the most important aspects in the multi-family home (appendix G). For G25-families, an extra toilet is a pull factor as well, and the difference with the G4-families is significant. A shared garden only for residents, a private bicycle parking (table 11 and 12), a private car parking (table 11), a car-free street and a large pavement for children to play are (clearly) pull factors (appendix G), whereby a shared garden only for residents is more a pull factor for G4-families compared to G25-families, with a significant difference.

Families with a preference for a single-family home would mainly consider multi-family housing as an alternative when it would have a private garden, a bedroom for each child and an extra room (figure 8). In this way, one can conclude that a lack of these can be considered as push factors of multi-family housing and therefore as pull factors for single-family housing.

5 Conclusion and Discussion

5.1 Conclusion

To what extent are families willing to choose for a home in the city centre or districts nearby instead of one in the suburbs or in another municipality (nearby) in the Netherlands, and if so, for what reasons?

The rush and sociability of the city, the proximity to amenities and because they consider it as pleasant and/or beautiful are the most often mentioned reasons for this preference in general. To be more specific, the proximity to daily shops, to school, the rush of the city centre and the proximity to work play the most important role in the choosing a home in the city centre or districts nearby. Other reasons for an urban preference are demonstrated by the logistic regression, which shows that odds of having a preference for an urban living environment is greater for families when they have mainly lived in an urban living environment during their childhood (0-18), when the family is a single-parent family, when the proximity to work is important, when the proximity to greenery is unimportant and when housing between 75 and 175 square metres is preferred.

While 42.3% of the G4-families have an urban preference, this is only 32.8% for G25-families. Furthermore, when analysing the residential preferences, there are similarities when comparing urban to non-urban and G4 to G25. The residential preferences of the G4-families are often similar to the residential preferences for the urban-oriented group, while those of the G25-families are often similar to the preferences of the non-urban group. Therefore, one could state that G4-families are to a certain extent a proxy for an urban life, while G25-families are to a certain extent a proxy for a non-urban life.

Comparing urban and non-urban families, the majority of both groups prefer a non-urban living environment, in particular the suburbs (63.1%). However, this also means that 36.9% prefers the city centre or districts nearby (urban). Of them, 44.7% prefers multi-family housing (16.5% of total sample) and 63.5% would consider multi-family housing as an alternative if their preferred single-family housing would not be possible in the city centre or districts nearby. So is there a need for multi-family housing in Dutch city centres? To a certain extent, yes there is. More than a third of all families prefers an urban living environment and a maximum of 79.2% of them could accept to live in multi-family housing.

5.2 Discussion

After drawing the conclusions of this study, the question is whether the results are in line with the expectations. Table 14 shows that 30.0% of all families with an urban preference has a low income (less than €34,500), meaning that these families can only afford to buy housing below €156,000, or to choose for social rental housing. On the contrary, 29.6% has a high income (€52,500 or more) and can afford to buy a house for more than €250,000, or private rental housing with a rental price above €971. From all families with a preference for an urban living environment, 40.4% can be considered as middle-class families, according to the definition by Van Middelkoop & Schilder (2017). Table 14 shows that these families can afford to buy a house up to €250,000, or private rental housing with a rental price between €710.68 and €971 per month.

Table 14. The income level and corresponding maximum affordable rental and buying price

N (=270)	%	Income level	Income per year	Rental price per month	WOZ value for buying
81	30.0	Low	Less than €34,500	< €710.68	< €156,000
50	18.5	Middle	€34,500 - €38,500	< €872	< €201,000
27	10.0	Middle	€38,500 - €44,500	< €872	< €201,000
32	11.9	Middle	€44,500 - €52,500	< €971	< €250,000
40	14.8	Middle-high	€52,500 - €70,000	< €1,300	< €363,000
23	8.5	High	€70,000 - €100,000	> €1,300	> €363,000
17	6.3	High	More than €100,000	> €1,300	> €363,000

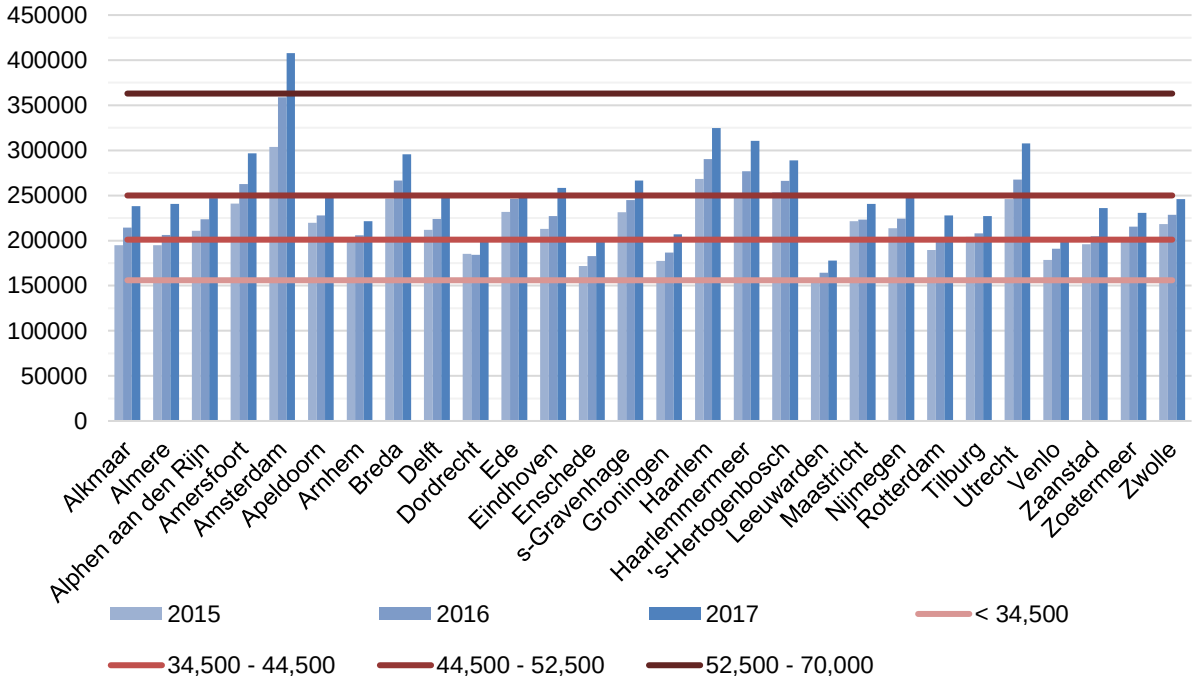
Source: Booi & De Graaff (2018); Author (2019)

As was explained in section 1.1, the lack of affordable housing is one of the reasons why (young) families are leaving the city to other municipalities. This is shown in figure 9. Firstly one can observe that families with a low-income (less than €34,500) are not able to buy a house in one of the 29 municipalities. However, they are still able to find housing in these cities, as they are eligible for social housing. For families with a middle-high income it is nowadays only difficult to find housing in Amsterdam, as the average selling price in 2017 was higher than the maximum price these families can afford (figure 9). However, in terms of affordability, they will not have difficulties in finding housing in one of the other municipalities.

The problem arises when analyzing the middle-income families. As stated in section 1.1, their income is too high to be eligible for social housing, but due to increasing housing prices have made housing in cities unaffordable. In 2015, the average selling price was in 4 out of 29 cities higher than the maximum price a family with an income between €44,500 and €52,500 could

afford. Two years later, in 2017, the average selling price was in 11 cities higher than the maximum price they could afford. For middle-income families with an income between €34,500 and €44,500, this was even more dramatic. While in 2015 the average selling price was in 18 out of 29 cities higher than the maximum price they could afford, in 2017 this was the case for 27 cities (figure 9).

Figure 9. Average selling prices for housing per municipality (2015-2017) compared to the maximum price which can be afforded per income level



Source: CBS (2018c); Author (2019)

Most of these middle-class families will belong to the target group called Average Family Homeowners (BPD, 2016), and in particular the subgroup Working Class Homeowners (BPD, 2016). These households are living in city districts and when their children are born, they prefer to stay within the same city district. These households have an income up to €52,500 per year and therefore are mainly living in private rental housing or housing priced up to €250,000 (BPD, 2016). This statement is in line with table 14. Due to a change in household composition, these families will need larger housing. Firstly, they are not eligible for social housing, because their income is too high. Secondly, the private rental housing sector is dealing with a shortage of available housing, meaning that new housing within the same city district in this sector will be hard to find. And thirdly, due to increasing housing prices in the cities, the housing prices are nowadays higher than the maximum price these middle-income families can afford (€250,000). This means that these families are neither able to rent, nor to buy new (larger) housing in the same city districts. For these type of families, the only option left is leaving the city districts and

moving to the suburbs or other municipalities in order to find affordable housing. This is in line with the expectation that middle-class families are in a certain way forced to move to smaller municipalities, because they cannot afford housing in the city (centre) anymore.

Insignificant variables

An explanation for the insignificance of *Age oldest child* and *Number of children* could be that older children do not necessarily need more space than younger children (for example in term of space to play), meaning there would be no need for more physical space in terms of housing (which can be found in a non-urban living environment). The same holds for the number of children. More children does not always have to mean that there is a need for more physical space. Housing in the city could be designed in such a way that there is still enough space for all the children, for example by providing a bedroom for each individual child, even though these bedrooms could be small in terms of square metres. An explanation of the insignificance of social embeddedness could be that the social network of families, such as relatives and friends, are not always all living in the same type of living environment.

For *Income level* and *Level of education* it is very hard to determine why there is no significant relationship with an urban preference. Residential preferences are diffuse and apparently not relate to income and education, but a possible explanation could be that these are closely related to the location and type of work, which were not included as variables.

Limitations

When discussing the limitations of this research, the outline of the survey has to be highlighted. Although very much time was taken to make useful questions, the mistake was made that not all questions were asked to both groups of people. Some questions were only asked to people with an urban preference, while there were also questions which were only asked to people with a non-urban preference. Although the outcome of these questions were still valuable for this research, it was not possible to use these questions are variables in the logistic regressions. This means that the comparison between both groups was relatively limited.

Another limitation is the fact that only certain types of families have been selected. Although 1881 started with filling out the survey, only 848 were qualified to participate, as the others did not meet the inclusion criteria. Only selecting certain types of families (selective response) could have had implications for the outcome, as there is a probability that the outcomes would have been different if all 1881 families would have been qualified to participate. There is a possibility that only selecting the 848 families has resulted in biased estimates.

5.3 Suggestions for further research

One of the most important recommendations for further research is to analyze this topic by making use of a different method: the conjoint analysis. Every time, the respondent has to choose between several profiles, while each profile is based on certain variables. Because the respondents have to trade-off the different profiles and to choose their most preferred one, this method enables the researcher to indirectly measure the preferences for certain variables. Although questions about families' preferences were asked, as well as their underlying reasons for these preferences, they never had to make trade-offs such as these. Therefore, it could be interesting to find out whether a conjoint analysis would provide the same results.

Besides, further research could focus more on the housing market in the Netherlands. As it has been shown that availability and affordability of housing plays an important role in the residential location choice, further research could include variables based on the housing supply and housing prices into the regression models or other statistical methods. It could be interesting to find out to what extent families are willing to move to the city centre if housing prices would not increase, but for example would decrease. Will there be more or less families willing to move to the city centre and districts nearby in times of financial crises? Reasons for moving to the city centre could perhaps change, as households could for example consider a home in the city centre as an investment, which can be sold when prices would go up again.

Finally, it would be interesting to know what families are willing to pay in terms of the residential location, as well as in terms of the house and the building itself. Are families willing to pay more for housing in the city centre than for housing further away? How much more are families willing to pay for an extra room, a (small) garden, or for a bedroom for each child? And what price are they willing to pay for a shared garden only for residents of the building? More questions about the willingness to pay could provide more knowledge for housing developers about what type of housing to supply, and where, in order to solve the mismatch between the demand and supply of family-housing in the city (centre).

References

ABF Research (2009). *Woonmilieutypologie.* Delft: ABF Research B.V.

ABF Research (2018). *Over ABF.* Retrieved on 15-10-2018 via https://www.abfresearch.nl/over-abf/. Delft: ABF Research B.V.

Adamowicz, W. Louviere, J. & Williams, M. (1994). Combining Revealed and Stated Preference Methods for Valuing Environmental Amenities. *Journal of Environmental Economic and Management*, 26(3), 271-292.

Adcock, R. & Collier, D. (2001). Measurement validity: A Shared Standard for Qualitative and Quantitative Research. *American Political Science Review,* 95(3), 529-546.

Bell, W. (1968). The city, the suburb, and a theory of social choice. In: S. Greer (Ed.), *The New Urbanization* (132-168). New York: St. Martins Press.

Bina, M., Warburg, V. & Kockelman, K. M. (2006). Location Choice vis-à -vis Transportation: Apartment Dwellers. *Transportation Research Record: Journal of the Transportation Research Board*, 1977, 93–102.

Booi, H. & De Graaff, L. (2018). *Wonen in de Metropoolregio Amsterdam 2017.* Amsterdam: OIS Gemeente Amsterdam.

Bootsma, H. G. (1998). *The Myth of Reurbanization: Location Dynamics of Households in the Netherlands.* Amsterdam: Thela Thesis.

Boterman, W. R., Karsten, L. & Musterd, S. (2010). Gentrifiers Settling Down? Patterns and Trends of Residential Location of Middle-Class Families in Amsterdam. *Housing Studies*, 25(5), 693-714.

BPD (2016). *BPD Mosaic 2016.* Amsterdam: Bouwfonds Property Development (BPD).

Brown, L. A. & Moore, E. G. (1970). The Intra-Urban Migration Process: A Perspective. *Geografiska Annaler. Series B, Human Geography,* 52(1), 1-13.

Bryman, A. (2012). *Social research methods*. 4th Edition. New York: Oxford University Press.

Cameron, G. & Muellbauer, J. (1998). The housing market and regional commuting and migration choices. *Scottish Journal of Political Economy*, 45, 420-446.

Cao, X. (2008). Is alternative development undersupplied? Examination of residential preferences and choices of Northern California movers. *Transportation Research Record: Journal of the Transportation Research Board,* 2077, 97-105.

CBS (2016). *Meer jonge gezinnen verlaten de stad.* Retrieved on 14-06-2018 via https://www.cbs.nl/nl-nl/nieuws/2016/23/meer-jonge-gezinnen-verlaten-de-stad. The Hague/Heerlen: CBS Statistics Netherlands.

CBS (2017a). *Veel jonge gezinnen verlaten de grote stad.* Retrieved on 14-06-2018 via https://www.cbs.nl/nl-nl/nieuws/2017/45/veel-jonge-gezinnen-verlaten-de-grote-stad. The Hague/Heerlen: CBS Statistics Netherlands.

CBS (2017b). *Grootste prijsstijging koopwoningen in 15 jaar.* Retrieved on 29-08-2018 via https://www.cbs.nl/nl-nl/nieuws/2017/16/grootste-prijsstijging-koopwoningen-in-15-jaar. The Hague/Heerlen: CBS Statistics Netherlands.

CBS (2018a). *Verhuisde personen; binnen gemeenten, tussen gemeenten, regio.* Retrieved on 01-10-2018 via http://statline.cbs.nl/Statweb/publication/?DM=SLNL&PA=60048NED&D1=89,158&D2=85,299,649,743&D3=a&HDR=T&STB=G1,G2&CHARTTYPE=3&VW=T. The Hague/Heerlen: CBS Statistics Netherlands.

CBS (2018b). *Huishoudens; kindertal, leeftijdsklasse kind, regio, 1 januari*. Retrieved on 15-01-2019 via https://opendata.cbs.nl/statline/#/CBS/nl/dataset/71487ned/table?ts=1547546939258. The Hague/Heerlen: CBS Statistics Netherlands.

CBS (2018c). *Bestaande koopwoningen; gemiddelde verkoopprijzen, regio.* Retrieved on 17-01-2019 via https://opendata.cbs.nl/statline/#/CBS/nl/dataset/83625NED/table?ts=1547736813889. The Hague/Heerlen: CBS Statistics Netherlands.

Chen, C. & Lin, H. (2011). Decomposing residential self-selection via a life-course perspective. *Environment and Planning A,* 43(11), 2608-2625.

Clark, W. A. V., Deurloo, M. C. & Dieleman, F. M. (1984). Housing consumption and residential mobility. *Annals of the Association of American Geographers,* 74(1), 29-43.

Clark, W. A. V. & Huang, Y. (2003). The life course and residential mobility in British housing markets. *Environment and Planning A,* 35, 323-339.

Clark, W. A. V. & Onaka, J. L. (1983). Life Cycle and Housing Adjustment as Explanations of Residential Mobility. *Urban Studies,* 20, 47-57.

Coupe, R. T. & Morgan, B. S. (1981). Towards and Fuller Understanding of Residential Mobility: A Case Study of Northampton, England. *Environment and Planning A*, 13(2), 201-215.

Courgeau, D. (1989). Family formation and urbanization. *Population: An English Selection,* 44(1), 123-146.

Couzy, M. (2017). *Gezinnen met jonge kinderen verlaten Amsterdam.* Retrieved on 14-06-2018 via https://www.parool.nl/amsterdam/gezinnen-met-jonge-kinderen-verlaten-amsterdam~a4506453/. Amsterdam: Het Parool.

Cremers, M. & Engelen, F. (2016). *Vragenlijst Woononderzoek Nederland (WoON) 2015.* Heerlen: Statistics Netherlands.

De Beer, J., Ekamper, P. & Van der Gaag, N. (2017). Grote steden groeien sneller dan de rest van Nederland. *Demos: bulletin over bevolking en samenleving ,* 34(2), 1-4.

De Bruyne, L. & Iserbyt, S. (2011). *Living in Mechelen: Verhuis- en blijfmotieven van jonge gezinnen en jongvolwassenen*. Brussels: Ladda.

De Ceuster, I. (2017). *Middenklasse gezinnen in hoogbouw.* Amsterdam: Universiteit van Amsterdam.

Deurloo, M. C., Clark, W. A. V. & Dieleman, F. M. (1990). Choice of residential environment in the Randstad. *Urban Studies,* 27(3), 335-351.

Deurloo, M, C., Dieleman, F. M. & Clark, W. A. V. (1986). Tenure choice in the Dutch housing market. *Environment and Planning A*, 19, 763-781.

Djebarni, R. & Al-Abed, A. (2000). Satisfaction level with neighbourhoods in low-income public housing in Yemen. *Property Management,* 18(4), 230-242.

DNB (2017). *The housing market in major Dutch cities.* Report 15-1. Amsterdam: De Nederlandsche Bank (DNB).

Doling, J. (1976). The Family Life Cycle and Housing Choice. *Urban Studies,* 13*,* 55-58.

Dreyfuss, E. (2016). *The year in housing: the middle class can't afford to live in cities anymore.* Retrieved on 02-10-2018 via https://www.wired.com/2016/12/year-housing-middle-class-cant-afford-live-cities-anymore/. New York: Wired Magazine.

Fagnani, J. (1993). Life course and space. In: C. Katz & J. Monk (Eds.), *Full Circles* (171–187). London: Routledge.

Feijten, P., Hooimeijer, P. & Mulder, C. H. (2008). Residential Experience and Residential Environment Choice over the Life-course. *Urban Studies,* 45(1), 141-162.

Feijten, P. & Mulder, C. H. (2002). The Timing of Household Events and Housing Events in the Netherlands: A Longitudinal Perspective. *Housing Studies,* 17(5), 773-792.

Flambard, V. (2017). Demand for housing choices in the north of France: a discrete approach. *Journal of European Real Estate Research*, 10(3), 346-365.

Fowler, F. (2008). *Survey Research Methods*. 4th Edition. Thousand Oaks: Sage Publications.

Frenkel, A., Bendit, E. & Kaplan, S. (2013). Residential location choice of knowledge-workers: The role of amenities, workplace and lifestyle. *Cities,* 35, 33-41.

Gehrke, S. R., Currans, K. M. & Clifton, K. J. (2018). Assessing the importance of housing, accessibility, and transportation characteristics on stated neighbourhood preference. *International Journal of Urban Sciences,* 1-18.

Gemeente Den Haag (2011). *Gezin in Den Haag.* The Hague: Gemeente Den Haag.

Gluszak, M. & Marona, B. (2016). Discrete choice model of residential location in Krakow. *Journal of European Real Estate Research*, 10(1), 4-16.

Heath, T. (2001). Revitalizing Cities. Attitudes toward City-Center Living in the United Kingdom. *Journal of Planning Education and Research,* 20, 464-475.

Hekwolter of Hekhuis, M., Nijskens, R. & Heeringa, W. (2017). *De woningmarkt in grote steden.* Report 15 – 1. Amsterdam: De Nederlandsche Bank (DNB).

Horowitz, J. L. & Louviere, J. J. (1990). The external validity of choice models based on laboratory choice experiments, in Fischer, M. M., Nijkamp, P. & Papageorgiou, Y. Y. (eds.) *Spatial Choices and Processes.* Amsterdam: 247-264.

Huang, C., Liao, H. & Chang, S. (1998). Social desirability and the Clinical Self-Report Inventory: methodological reconsideration. *Journal of Clinical Psychology*, 54(4), 517-528.

Jean, S. (2014). Ville ou banlieue? : Les choix résidentiels des jeunes familles de classe moyenne dans la grande région de Montréal. *Recherches sociographiques,* 55(1), 105-134.

Johnson, T. & Fendrich, M. (2002). *A validation of the Crowne-Marlowe Social Desirability Scale.* Chicago: University of Illinois.

Julen, J. (2017). *Steeds meer jonge gezinnen verlaten de hoofdstad.* Retrieved on 29-08-2018 via https://www.trouw.nl/home/steeds-meer-jonge-gezinnen-verlaten-de-hoofdstad~a3f5e258/. Amsterdam: Trouw.

Kamerman, S. (2013). *Met z'n vijven op 70m in de binnenstad 2*. Retrieved on 14-06-2018 via https://www.nrc.nl/nieuws/2013/07/29/met-zn-vijven-op-70m-in-de-binnenstad-1277147-a288732. Amsterdam: NRC.

Karsten, L. (2003). Family Gentrifiers: Challenging the City as a Place Simultaneously to Build a Career and to Raise Children. *Urban Studies,* 40(12), 2573-2584.

Karsten, L. (2007). Housing as a Way of Life: Towards an Understanding of Middle-Class Families' Preference for an Urban Residential Location. *Housing Studies*, *22*(1), 83-98.

Karsten, L. & Van Kempen, E. (2001). Middenklassegezinnen in herstructureringswijken. *Beleid en Maatschappij,* 28, 18-29.

Kendig, H. L. (1984). Housing careers, Life Cycle and Residential Mobility: Implications for the Housing Market. *Urban Studies,* 21, 271-283.

Kim, T. K., Horner, M. W. & Marans, R. W. (2005a). Life Cycle and Environmental Factors in Selecting Residential and Job Locations. *Housing Studies,* 20(3), 457-473.

Kim, J. H., Pagliari, F. & Preston, J. (2005b). The Intention to Move and Residential Location Choice Behaviour. *Urban Studies,* 42(9), 1621-1636.

King, M. F. & Bruner, G. C. (2000). Social desirability bias: A neglected aspect of validity testing. *Psychology and Marketing*, 17(2), 79-103.

Kroes, E. P. & Sheldon, R. J. (1988). Stated preference methods. An Introduction. *Journal of Transport Economics and Policy,* 22, 11-25.

Laarman, K. & Van Dam, F. (2018). Waar willen jonge gezinnen wonen? *Demos*, 34(7), 4-7.

Lane, S. & Kinsey, J. (1980). Housing Tenure Status and Housing Satisfaction. *Journal of Consumer Affairs,* 14(2), 341-365.

Lawton, P., Murphy, E. & Redmond, D. (2013). Residential preferences of the 'creative class'?. *Cities,* 31, 47-56.

Lees, L., Slater, T. & Wyly, E. (2008). *Gentrification*. London: Routledge.

Lennartz, C. & Vrieselaar, N. (2018). *Huizenprijzen opnieuw hard gestegen, maar het vertrouwen op de woningmarkt slinkt.* Kwartaalbericht Woningmarkt. Utrecht: Rabobank/RaboResearch.

Lewis, P. G. & Baldassare, M. (2010). The complexity of public attitudes toward compact development. *Journal of the American Planning Association*, 76(2), 219-237.

Liao, F. H., Farber, S. & Ewing, R. (2015). Compact development and preference heterogeneity in residential location choice behaviour: A latent class analysis. *Urban Studies,* 52(2), 314-337.

Lilius, J. (2014). Is There Room for Families in the Inner City? Life-Stage Blenders Challenging Planning. *Housing Studies,* 29(6), 843-861.

Madge, C. & O'Connor, H. (2002). On-line with e-mums: Exploring the Internet as a medium for research. *Area*, 34(1), 92-102.

McAuly, W. J. & Nutty, C. L. (1982). Residential Preferences and Moving Behavior: A Family Life-Cycle Analysis. *Journal of Marriage and Family,* 44(2), 301-309.

McHugh, M. L. (2013). The Chi-square test of independence. *Biochemia Medica,* 23(2), 143-149.

McLafferty, L. (2010). Conducting Questionnaire Surveys. In N. J. Clifford, S. French & G. Valentine (Eds.), *Key methods in geography* (77-88). Thousand Oaks: Sage Publications.

Michelson, W. (1977). *Environmental Choice, Human Behavior, and Residential Satisfaction.* New York: Oxford University Press.

Mulder, C. H. (1996). Housing choice: assumptions and approaches. *Journal of Housing and the Built Environment,* 11(3), 209-232.

Mulder, C. H. & Hooimeijer, P. (1999). Residential relocations in the life course. In L. J. G. van Wissen & P. A. Dykstra (Eds.), *Population issues. An interdisciplinary focus* (159–186). New York: Kluwer Academic/Plenum Publishers.

Murie, A. (1974). *Household Movement and Housing Choice: A Study Basedon the West Yorkshire Movers Survey 1969.* Birmingham: University of Birmingham. Center for Urban and Regional Studies.

O'Connor, N. (2018). *Moving out: Vancouver families leave city for better housing options.* Retrieved on 02-10-2018 via https://www.vancourier.com/real-estate/moving-out-

vancouver-families-leave-city-for-better-housing-options-1.23404313. Vancouver: Vancouver Courier.

Olaru, D., Smith, B. & Taplin, J. H. E. (2011). Residential location and transit-oriented development in a new rail corridor. *Transportation Research Part A: Policy and Practice,* 45(3), 219-237.

PanelClix (2018). *Over PanelClix.* Retrieved on 4-12-2018 via https://www.panelclix.nl/over/index.htm. Amsterdam: PanelClix.

Pattaroni, L., Thomas, M-P. & Kaufmann, V. (2009). *Habitat urbain durable pour les familles.* Lausanne: Laboratoire de Sociologie Urbain – École Polytechnique Féderale de Lausanne.

Peng, C. Y. J., Lee, K. L. & Ingersoll, G. M. (2002). An Introduction to Logistic Regression Analysis and Reporting. *The Journal of Educational Research,* 96(1), 3-14.

Pickvance, C. G. (1974). Life Cycle, Housing Tenure and Residential Mobility: a Path Analytic Approach. *Urban Studies*, 11, 171-188.

Reid, W. (2018). *As Virginia's cities boom, more families are leaving them.* Retrieved on 02-10-2018 via https://news.virginia.edu/content/virginias-cities-boom-more-families-are-leaving-them. Charlottesville: University of Virginia.

Rose, D. & Chicoine, N. (1991). Access to school daycare services: class, family, ethnicity and space in Montreal's old and new inner city. *Geoforum*, 22, 185–201.

Rossi, P. H. (1955). *Why Families Move: A Study in the Social Psychology of Urban Residential Mobility.* Glencoe, Illinois: The Free Press.

Rossi, P. H. (1980). *Introduction to the second edition. Why Families Move*. 2nd Edition. Beverly Hills: Sage Publications.

Salkind, N. J. (2010). *Encyclopedia of Research Design.* Thousand Oaks: Sage Publications.

Schwanen, T. & Mokhtarian, P. L. (2007). Attitudes toward travel and land use and choice of residential neighbourhood type: Evidence from the San Francisco Bay Area. *Housing Policy Debate,* 18(1), 171-207.

Shaver, K. (2017). *Cities turn to 'missing middle' housing to keep older millennials from leaving.* Retrieved on 02-10-2018 via https://www.washingtonpost.com/local/trafficandcommuting/cities-turn-to-missing-middle-housing-to-keep-older-millennials-from-leaving/2017/12/09/3a129bc8-d54a-11e7-95bf-df7c19270879_story.html?noredirect=on&utm_term=.eb662d92f76a. Washington: The Washington Post.

Silverman, E. (2007). *Families and urban regeneration: the case of mixed income new communities in the UK.* Doctoral dissertation, London School of Economics and Political Science (United Kingdom).

Smith, B. & Olaru, D. (2013). Lifecycle stages and residential location choice in the presence of latent preference heterogeneity. *Environment and Planning A,* 45(10), 2495-2514.

So, K., Orazem, P. & Otto, D. (2001). The effects of housing prices, wages, and commuting time on joint residential and job location choices. *American Journal of Agricultural Economics*, 83, 1036–1048.

Statistics Solutions (2018). *Assumptions of Logistic Regression.* Retrieved on 18-12-2018 via https://www.statisticssolutions.com/assumptions-of-logistic-regression/. Clearwater: Statistics Solutions.

The Age (2005). *Why young people are leaving our big cities.* Retrieved on 02-10-2018 via https://www.theage.com.au/opinion/why-young-people-are-leaving-our-big-cities-20050809-ge0npc.html. Sydney: The Age.

Timmermans, H., Molin, E. & Van Noortwijk, L. (1994). Housing Choice Processes: Stated Versus Revealed Modelling Approaches. *Netherlands Journal of Housing and the Built Environment,* 9(3), 215-227.

Van den Berg, M. (2013). City Children and Genderfied Neighbourhoods: The New Generation as Urban Regeneration Strategy. *International Journal of Urban and Regional Research,* 37(2), 523-635.

Van De Vyvere, Y. (1994). Stated Preference Decompositional Modelling and Residential Choice. *Geoforum,* 25(2), 189-202.

Van Hemert, J-M., Freeling, M. & Boumans, M. (2017). *Eengezinsappartement.* Rotterdam: Gemeente Rotterdam.

Van Huis, M., Nicolaas, H. & Croes, M. (2004). *Migration of the four largest cities in the Netherlands*. Voorburg: CBS Statistics Netherlands.

Van Middelkoop, M. & Schilder, F. (2017). *Middeninkomens op de woningmarkt: Ruimte op een krap speelveld.* The Hague: Planbureau voor de leefomgeving (PBL).

Varady, D. P. (1990). Influences on the city-suburban choice. A Study of Cincinnati homebuyers. *Journal of American Planning Association,* 56(1), 22-40.

Vinke, J., Van der Lubbe, M. & Huisink, T. (2016). *Family plan.* Amsterdam: ANA architecten.

Vlak, A., Van Middelkoop, M., Schilder, F. & Eskinasi, M. (2017). *Perspectieven voor het middensegment van de woningmarkt.* The Hague: Planbureau voor de Leefomgeving (PBL).

VROM (2004). *Leefbaarheid van wijken.* Amsterdam: RIGO Research en Advies BV.

Wiest, K. (2011). Large-Scale Housing Estates in Central and East European Cities: Between Residential Preferences and Local Housing Market Differences. Housing, *Theory and Society, 28(4),* 410-431.

Willocx, C. (2018). *Waarom één op de vijf jonge gezinnen de stad verlaat.* Retrieved on 09-10-2018 via https://www.nieuwsblad.be/cnt/dmf20180312_03405971. Het Nieuwsblad: Antwerp.

Zondag, B. & Pieters, M. (2005). Influence of accessibility on residential location choice. *Transportation Research Record: Journal of the Transportation Research Board,* 1902, 63-70.

Appendices

A Living environment typologies

Living environment (13 point scale)	Living environment (5 point scale)
Centre-urban-plus Centre-urban Centre small urban	Centre urban
Urban pre-war Urban post-war compact Urban post-war grounded Small urban	Urban districts around the city centre
Suburbs Green small urban	Suburbs
Centre-village Village	Village
Rural accessible Rural peripheral	Rural living

Source: ABF Research (2009)

B Municipalities with a centre-urban-plus or centre-urban living environment with more than 100,000 inhabitants on 31-12-2017

Source: Author (2019)

C Self-designed survey

1 INTRODUCTIE

Welkom bij deze enquête die uit vragen bestaat over jouw voorkeuren wat betreft de woning en woonomgeving. De enquête wordt uitgevoerd voor Bouwfonds.

Het invullen van de enquête duurt ongeveer 10 minuten.

Alvast bedankt voor je medewerking.

2 SELECTIEVRAGEN + ACHTERGRONDVRAGEN

De volgende vragen gaan over de achtergrond van jouw huishouden en jouw verhuisgeneigdheid.

→ *Allen*

1. In welke gemeente woon je?

< Eén antwoord mogelijk >

a) Alkmaar
b) Almere
c) Alphen aan den Rijn
d) Amersfoort
e) Amsterdam
f) Apeldoorn
g) Arnhem
h) Breda
i) Delft
j) Den Haag
k) Dordrecht
l) Ede
m) Eindhoven
n) Enschede
o) Groningen
p) Haarlem
q) Haarlemmermeer
r) Leeuwarden
s) Leiden
t) Maastricht
u) Nijmegen
v) Rotterdam
w) 's-Hertogenbosch
x) Tilburg
y) Utrecht
z) Venlo
aa) Zaanstad
bb) Zoetermeer
cc) Zwolle
dd) In een andere gemeente → Je behoort helaas niet tot de doelgroep die we zoeken

→ *Indien vraag [1] = A t/m CC*

2. Wat is jouw type huishouden?

< Eén antwoord mogelijk >

a) Alleenstaand → Je behoort helaas niet tot de doelgroep die we zoeken

b) Paar zonder thuiswonend(e) kind(eren) → Je behoort helaas niet tot de doelgroep die we zoeken
c) Paar met kind(eren)
d) Eenouder met kind(eren)

→ *Indien vraag [2] = B, D*

3. Wil je binnen nu en 10 jaar verhuizen?

< Eén antwoord mogelijk >

a) Nee, ik heb geen verhuisplannen → Je behoort helaas niet tot de doelgroep die we zoeken
b) Ja, en ik heb al iets gevonden → Je behoort helaas niet tot de doelgroep die we zoeken
c) Ja, ik wil binnen 2 jaar verhuizen
d) Ja, ik wil tussen 2 en 5 jaar verhuizen
e) Ja, ik wil tussen 5 en 10 jaar verhuizen
f) Ja, ik wil over meer dan 10 jaar verhuizen → Je behoort helaas niet tot de doelgroep die we zoeken
g) Geen idee / weet ik niet → Je behoort helaas niet tot de doelgroep die we zoeken

→ *Indien vraag [3] = C, D, E*

4. Wil je verhuizen naar een bestaande woning of naar een nieuwe woning?

< Eén antwoord mogelijk >

a) Bestaande woning
b) Nieuwe woning
c) Geen voorkeur

→ *Allen*

5. Wil je naar een huurwoning of naar een koopwoning verhuizen? *(Servicekosten a.j.b. niet meetellen) (Als je twijfelt tussen huren of kopen, geef dan jouw grootste voorkeur aan)*

< Eén antwoord mogelijk >

a) Sociale huurwoning (huur tot €711 per maand) → vraag 7
b) Vrije sector huurwoning (huur vanaf €711 per maand) → vraag 7
c) Koopwoning → vraag 6

→ *Indien vraag [5] = C*

6. In welke prijsklasse zoek je een koopwoning? *(Houd hierbij rekening met jouw financiële mogelijkheden)*

< Eén antwoord mogelijk >

a) Minder dan €150.000
b) €150.000 tot €250.000
c) €250.000 tot €350.000
d) €350.000 tot €450.000
e) €450.000 tot €550.000
f) €550.000 tot €650.000
g) €650.000 tot €750.000
h) Meer dan €750.000

→ *Allen*

7. Wat is jouw leeftijd? (open vraag)

……

→ *Indien 7 = C, D*

8. Hoe oud is jouw oudste thuiswonend kind?

a) 0 t/m 5 jaar
b) 6 t/m 12 jaar
c) 13 t/m 18 jaar

→ *Allen*

9. Hoe oud is jouw tweede thuiswonende kind?

a) 0 t/m 5 jaar → vraag 10
b) 6 t/m 12 jaar → vraag 10
c) 13 t/m 18 jaar → vraag 10
d) Ik heb (nog maar) 1 thuiswonend kind → vraag 12

→ *Indien 9 = A, B, C*

10. Hou oud is jouw derde thuiswonend kind?

a) 0 t/m 5 jaar → vraag 11
b) 6 t/m 12 jaar → vraag 11
c) 13 t/m 18 jaar → vraag 11
d) Ik heb (nog maar) 2 thuiswonende kinderen → vraag 12

→ *Indien 10 = A, B, C*

11. Hoe oud is jouw vierde thuiswonend kind?

a) 0 t/m 5 jaar
b) 6 t/m 12 jaar
c) 13 t/m 18 jaar
d) Ik heb (nog maar) 3 thuiswonende kinderen

→ *Allen*

12. Wat is het bruto jaarinkomen van jouw huishouden (inclusief partner)?

< Eén antwoord mogelijk >

a) Wil ik liever niet zeggen / geen antwoord
b) Weet ik niet
c) Minder dan €34.500
d) €34.500 tot €38.500
e) €38.500 tot €44.500
f) €44.500 tot €52.500
g) €52.500 tot €70.000
h) €70.000 tot €100.000
i) Meer dan €100.000

→ *Allen*

13. Wat is jouw hoogst voltooide opleiding?

< Eén antwoord mogelijk >

a) Wil ik niet zeggen
b) Basisschool
c) Lagere middelbare opleiding of lagere beroepsopleiding (MAVO / LBO of vergelijkbaar)
d) Hogere middelbare opleiding of middelbare beroepsopleiding (HAVO / VWO / MBO of vergelijkbaar)
e) Hogere beroepsopleiding of universiteit (HBO / WO)

→ *Allen*

14. Woon je in een huurwoning of in een koopwoning?

< Eén antwoord mogelijk >

a) Een sociale huurwoning (huur tot €711 per maand)
b) Een vrije sector huurwoning (huur vanaf 711 per maand)
c) Een koopwoning

3 WOONWENSEN

De volgende vragen gaan over jouw woonwensen. We tonen je hierna 5 woonomgevingen. Bekijk deze alsjeblieft goed. Daarna volgen er 2 vragen.

Het centrum van een stad

1. Historisch of nieuw centrum van een stad
2. Hoge woningdichtheid: appartementen en flats
3. Wonen boven winkels
4. Groot aanbod van voorzieningen zoals winkels, horeca, bioscoop, theater, museum, etc.

Een wijk die grenst aan het centrum

1. Woonwijken op grotere afstand van en rondom het centrum
2. Er wordt vooral gewoond
3. Relatief weinig groen
4. Weinig voorzieningen en werkgelegenheid

Een wijk aan de rand van de stad

1. Lagere woningdichtheid dan in het centrum van de stad en dan in wijken grenzend aan het centrum
2. Er wordt vooral gewoond
3. Ruim en groen van opzet (relatief veel groen)
4. Vooral huizen met tuinen
5. Weinig werkgelegenheid

Een dorp

1. Relatief lage woningdichtheid
2. Er wordt vooral gewoond
3. Vooral huizen met tuinen
4. Beperkt voorzieningenaanbod

Een landelijk gebied in de buurt van een dorp

1. Bevinden zich buiten de dorpen
2. Verspreide huizen op afstand van elkaar
3. Lage woningdichtheid, veel groen
4. Bijna geen voorzieningen

→ *Allen*

15. In welk type woonomgeving ben je tot jouw 18e levensjaar opgegroeid? *(Als je in meerdere woonomgevingen hebt gewoond, kies je voor de omgeving waar je het langst hebt gewoond)*

< Eén antwoord mogelijk >

a) In het centrum van de stad (=1)
b) In een wijk die grenst aan het centrum (=2)
c) In een wijk aan de rand van de stad (=3)
d) In een dorp (=4)
e) In een landelijk gebied in de buurt van een dorp (=5)

→ *Allen*

16. Als je zou gaan verhuizen, naar wat voor soort woonomgeving wil je dan verhuizen?

< Eén antwoord mogelijk >

a) In het centrum van de stad (=1)
b) In een wijk die grenst aan het centrum (=2)
c) In een wijk aan de rand van het stad (=3)
d) In een dorp (=4)
e) In een landelijk gebied in de buurt van een dorp (=5)

→ *Allen*

17. Waarom wil je naar deze woonomgeving verhuizen? (open vraag)

……

→ *Allen*

18. Wat voor woning zoek je? *(Houd hierbij rekening met je financiële mogelijkheden)*

< Eén antwoord mogelijk >

a) Appartement → vraag 20
b) Galerijflat / portiekflat → vraag 20
c) Benedenwoning / bovenwoning → vraag 20
d) Maisonnette *(= appartement van 2 of meer verdiepingen)* → vraag 20
e) Rijtjeshuis / hoekwoning → vraag 19
f) Patiowoning / bungalow → vraag 19
g) Twee-onder-een kap woning → vraag 19
h) Vrijstaande woning → vraag 19
i) Anders, namelijk … (open optie) → vraag 20

→ *Indien vraag [18] = E, F, G, H*

19. Je hebt aangegeven dat je een voorkeur hebt voor een eengezinswoning. Mocht dit niet mogelijk zijn of mocht dit type woning niet beschikbaar zijn, naar welk woningtype wil je dan verhuizen?

< Eén antwoord mogelijk >

a) Appartement
b) Galerijflat / portiekflat
c) Benedenwoning / bovenwoning
d) Maisonnette *(= appartement van 2 of meer verdiepingen)*
e) Geen van bovenstaande woningtypen

→ *Allen*

20. Hoe groot moet de woning zijn die je zoekt?

a) 75 tot 100 m2
b) 100 tot 125 m2
c) 125 tot 150 m2
d) 150 tot 175 m2
e) 175 tot 200 m2
f) Meer dan 200 m2

→ *Na deze vraag door naar vraag [21/22]*

→ *Indien vraag [16] = A, B*

21. Je hebt aangegeven een voorkeur te hebben voor een wijk in of nabij het stadscentrum. Hoe belangrijk zijn de volgende zaken bij deze keuze?

< Eén antwoord per optie >

	Zeer onbelangrijk	Onbelangrijk	Neutraal	Belangrijk	Zeer belangrijk
Nabijheid van werk	O	O	O	O	O
Nabijheid van school	O	O	O	O	O
Nabijheid van kinderdagverblijf / naschoolse opvang	O	O	O	O	O
Nabijheid van winkels voor dagelijkse boodschappen	O	O	O	O	O
Nabijheid van winkels voor niet-dagelijks bezoek (bijvoorbeeld mode, luxeartikelen, elektronica)	O	O	O	O	O
Nabijheid van speelfaciliteiten voor kinderen	O	O	O	O	O
Nabijheid van sport- en recreatievoorzieningen	O	O	O	O	O
Nabijheid van groen (bijvoorbeeld park, plantsoen)	O	O	O	O	O
Nabijheid van culturele voorzieningen (bijvoorbeeld theater, museum)	O	O	O	O	O
Nabijheid van horeca (bijvoorbeeld restaurant, café)	O	O	O	O	O
Nabijheid van medische voorzieningen (bijvoorbeeld apotheek, huisarts)	O	O	O	O	O
Nabijheid van familie / vrienden / kennissen	O	O	O	O	O
Nabijheid van halte OV: bus / metro / tram	O	O	O	O	O
Nabijheid van station OV: trein	O	O	O	O	O
Nabijheid van een levendige omgeving	O	O	O	O	O
Aanbod van evenementen (bijvoorbeeld festival, markt)	O	O	O	O	O
Bereikbaarheid per auto	O	O	O	O	O

→ *Na deze vraag door naar vraag [23]*

→ *Indien vraag [16] = C, D, E*

22. Je hebt aangegeven een voorkeur te hebben voor een wijk aan de rand van de stad, een dorp of een landelijk gelegen gebied. Hoe belangrijk zijn de volgende zaken bij de keuze?

< Eén antwoord per optie >

	Zeer onbelangrijk	Onbelangrijk	Neutraal	Belangrijk	Zeer belangrijk
Nabijheid van werk	O	O	O	O	O
Nabijheid van familie / vrienden / kennissen	O	O	O	O	O
Nabijheid van speelfaciliteiten voor kinderen	O	O	O	O	O
Nabijheid van groen (bijvoorbeeld park, plantsoen)	O	O	O	O	O
Nabijheid van een rustige omgeving	O	O	O	O	O
Nabijheid van openbaar vervoer	O	O	O	O	O
Bereikbaarheid per auto	O	O	O	O	O
Verkeersdrukte / verkeersveiligheid	O	O	O	O	O
Veiligheid van de buurt	O	O	O	O	O
Een buurt waar ook (veel) andere gezinnen met kinderen wonen	O	O	O	O	O
Een woning met een tuin	O	O	O	O	O
Woningen zijn beter betaalbaar	O	O	O	O	O

→ *Na deze vraag door naar vraag [24]*

→ *Indien vraag [16] = A, B*

23. Wat zijn de 3 belangrijkste redenen dat je in of nabij het stadscentrum wilt wonen? *(Kies 3 antwoorden)*

< Drie antwoorden >

- ☐ Nabijheid van werk
- ☐ Nabijheid van school
- ☐ Nabijheid van kinderdagverblijf / naschoolse opvang
- ☐ Nabijheid van winkels voor dagelijkse boodschappen
- ☐ Nabijheid van winkels voor niet-dagelijks bezoek (bijvoorbeeld mode, luxeartikelen, elektronica)
- ☐ Nabijheid van speelfaciliteiten voor kinderen
- ☐ Nabijheid van sport- en recreatievoorzieningen
- ☐ Nabijheid van groen (bijvoorbeeld park, plantsoen)
- ☐ Nabijheid van culturele voorzieningen (bijvoorbeeld theater, museum)
- ☐ Nabijheid van horeca (bijvoorbeeld restaurant, café)
- ☐ Nabijheid van medische voorzieningen (bijvoorbeeld apotheek, huisarts)
- ☐ Nabijheid van familie / vrienden / kennissen
- ☐ Nabijheid van halte OV: bus / metro / tram
- ☐ Nabijheid van station OV: trein
- ☐ Nabijheid van een levendige omgeving

☐ Aanbod van evenementen (bijvoorbeeld festival, markt)

☐ Bereikbaarheid per auto

→ *Na deze vraag door naar vraag [25]*

→ *Indien vraag [16] = C, D, E*

24. Wat zijn de 3 belangrijkste redenen dat je in een wijk aan de rand van de stad, een dorp of een landelijk gelegen gebied wilt wonen? *(Kies 3 antwoorden)*

< Drie antwoorden >

☐ Nabijheid van werk

☐ Nabijheid van familie / vrienden / kennissen

☐ Nabijheid van speelfaciliteiten voor kinderen

☐ Nabijheid van groen (bijvoorbeeld park, plantsoen)

☐ Nabijheid van een rustige omgeving

☐ Nabijheid van openbaar vervoer

☐ Bereikbaarheid per auto

☐ Verkeersdrukte / verkeersveiligheid

☐ Veiligheid van de buurt

☐ Een buurt waar ook (veel) andere gezinnen met kinderen wonen

☐ Een woning met een tuin

☐ Woningen zijn beter betaalbaar

→ *Na deze vraag door naar vraag [26]*

→ *Indien vraag [16] = A, B*

25. Wat is/zijn de reden(en) dat je <u>niet</u> wilt verhuizen naar een wijk aan de rand van de stad, een dorp of een landelijk gelegen gebied? *(Meerdere antwoorden mogelijk)*

< Meerdere antwoorden mogelijk >

☐ Te rustig

☐ Gebrek aan levendigheid

☐ Te weinig voorzieningen

☐ Te lange reistijd naar het centrum van een stad

☐ Te grote afstand tot mijn werk

☐ Te grote afstand tot mijn familie / vrienden / kennissen

☐ Anders, namelijk … (open optie)

→ *Na deze vraag door naar vraag [27/33]*

→ *Indien vraag [16] = C, D, E*

26. Wat is/zijn de reden(en) dat je <u>niet</u> wilt verhuizen naar een wijk in of nabij het stadscentrum? *(Meerdere antwoorden mogelijk)*

< Meerdere antwoorden mogelijk >

☐ Te druk

☐ Te weinig gezinnen met kinderen in de buurt

☐ Te weinig groen (bijvoorbeeld park, plantsoen)

☐ Te weinig speelfaciliteiten voor kinderen

☐ Te slechte bereikbaarheid per auto

☐ Te grote afstand tot mijn werk

☐ Te grote afstand tot mijn familie / vrienden / kennissen

☐ Te onveilige buurten / wijken

☐ Te dure woningen

☐ Geen geschikte woningen

☐ Woningen hebben (meestal) geen tuin

☐ Anders, namelijk … (open optie)

→ *Na deze vraag door naar vraag [27/33]*

→ *Indien vraag [18] = A, B, C, D, I of → indien vraag [19] = A, B, C, D*

27. Je hebt aangegeven naar een meergezinswoning te willen verhuizen. Hoe belangrijk vind je de volgende zaken in een meergezinswoning?

< Eén antwoord per optie >

	Zeer onbelangrijk	Onbelangrijk	Neutraal	Belangrijk	Zeer belangrijk
Een eigen slaapkamer voor elk kind	O	O	O	O	O
Een berging	O	O	O	O	O
Een extra WC	O	O	O	O	O
Een extra douche	O	O	O	O	O
Een extra kamer (voor bijvoorbeeld thuiswerken, ontspanning, studie)	O	O	O	O	O
Een eigen (privé) tuin	O	O	O	O	O
Een eigen (privé) balkon	O	O	O	O	O
Een eigen (privé) dakterras	O	O	O	O	O
De mogelijkheid om wanden in de woning te kunnen verschuiven (bijvoorbeeld om meer of minder kamers te creëren)	O	O	O	O	O
Uitklapbare meubels om objecten (zoals bijvoorbeeld een bed) tijdelijk op te bergen	O	O	O	O	O
Verhoogde plafonds van 3 meter	O	O	O	O	O
Brede gangen waar kinderen kunnen spelen	O	O	O	O	O

→ Indien vraag [18] = A, B, C, D, I of → indien vraag [19] = A, B, C, D

28. Hoe belangrijk vind je de volgende zaken in het woongebouw?

< Eén antwoord per optie >

	Zeer onbelangrijk	Onbelangrijk	Neutraal	Belangrijk	Zeer belangrijk
Een royale entree waar kinderen kunnen spelen	O	O	O	O	O
Een brede galerij binnen of buiten waar kinderen kunnen spelen	O	O	O	O	O
Gezamenlijke speelvoorzieningen voor kinderen in het gebouw	O	O	O	O	O
Een (binnen)tuin/speelplaats alleen toegankelijk voor bewoners van het gebouw	O	O	O	O	O
Een gezamenlijk(e) dakterras/tuin alleen toegankelijk voor bewoners van het gebouw	O	O	O	O	O
Een eigen (privé) fietsenstalling	O	O	O	O	O
Een gezamenlijke fietsenstalling	O	O	O	O	O
Een eigen (privé) garage / parkeerplaats	O	O	O	O	O
Een gezamenlijke garage / parkeerplaats	O	O	O	O	O

→ Indien vraag [18] = A, B, C, D, I of → indien vraag [19] = A, B, C, D

29. Hoe belangrijk vind je de volgende zaken in de directe omgeving?

< Eén antwoord per optie >

	Zeer onbelangrijk	Onbelangrijk	Neutraal	Belangrijk	Zeer belangrijk
Een openbare (binnen)tuin toegankelijk voor iedereen (ook voor mensen uit de buurt en toevallige passanten)	O	O	O	O	O
Een brede stoep waar kinderen kunnen spelen	O	O	O	O	O
Een autoluwe woonstraat	O	O	O	O	O
Een parkeerplaats voor fietsen op straat in plaats van op de stoep	O	O	O	O	O
Voorwerpen die als speelobject gebruikt kunnen worden (bijvoorbeeld lantaarnpalen, oplaad- of parkeerautomaten en bomen)	O	O	O	O	O

→ Indien vraag [18] = A, B, C, D, I of → indien vraag [19] = A, B, C, D

30. Welke 2 van de volgende voorzieningen vind je het allerbelangrijkst in de meergezinswoning? *(Kies 2 antwoorden)*

< Twee antwoorden >

- O Een eigen slaapkamer voor elk kind
- O Een berging
- O Een extra WC
- O Een extra douche
- O Een extra kamer (voor bijvoorbeeld thuiswerken, ontspanning, studie)
- O Een eigen (privé) tuin

- O Een eigen (privé) balkon
- O Een eigen (privé) dakterras
- O De mogelijkheid om wanden in de woning te kunnen verschuiven (bijvoorbeeld om meer of minder kamers te creëren)
- O Uitklapbare meubels om objecten (zoals bijvoorbeeld een bed) tijdelijk op te bergen
- O Verhoogde plafonds van 3 meter
- O Brede gangen waar kinderen kunnen spelen

→ *Indien vraag [18] = A, B, C, D, I of → indien vraag [19] = A, B, C, D*

31. Welke 2 van de volgende voorzieningen vind je het allerbelangrijkst in het woongebouw? *(Kies 2 antwoorden)*

< Twee antwoorden >

- O Een royale entree waar kinderen kunnen spelen
- O Een brede galerij binnen of buiten waar kinderen kunnen spelen
- O Gezamenlijke speelvoorzieningen voor kinderen in het gebouw
- O Een (binnen)tuin/speelplaats alleen toegankelijk voor bewoners van het gebouw
- O Een gezamenlijk(e) dakterras/tuin alleen toegankelijk voor bewoners van het gebouw
- O Een eigen (privé) fietsenstalling
- O Een gezamenlijke fietsenstalling
- O Een eigen (privé) garage / parkeerplaats
- O Een gezamenlijke garage / parkeerplaats

→ *Indien vraag [18] = A, B, C, D, I of → indien vraag [19] = A, B, C, D*

32. Welke 2 van de volgende voorzieningen vind je het allerbelangrijkst in de directe omgeving? *(Kies 2 antwoorden)*

< Twee antwoorden >

- O Een openbare (binnen)tuin toegankelijk voor iedereen (ook voor mensen uit de buurt en toevallige passanten)
- O Een brede stoep waar kinderen kunnen spelen
- O Een autoluwe woonstraat
- O Een parkeerplaats voor fietsen op straat in plaats van op de stoep
- O Voorwerpen die als speelobject gebruikt kunnen worden (bijvoorbeeld lantaarnpalen, oplaad- of parkeerautomaten en bomen)

→ *Na deze vraag door naar vraag [34]*

→ *Indien vraag [18] = E, F, G, H + vraag [19] = E*

33. Je hebt aangegeven naar een eengezinswoning te willen verhuizen. Wanneer de volgende zaken worden aangeboden in een appartement, galerijflat/portiekflat, bovenwoning/benedenwoning, maisonnette in een wijk in of nabij het stadscentrum, ben je dan wel bereid om hier naartoe te verhuizen? *(Meerdere antwoorden mogelijk)*

< Meerdere antwoorden mogelijk >

	Zeker niet	Niet	Neutraal	Wel	Zeker wel
Een eigen slaapkamer voor elk kind	O	O	O	O	O
Een extra kamer (voor bijvoorbeeld thuiswerken, ontspanning, studie)	O	O	O	O	O
Een eigen (privé) tuin	O	O	O	O	O
Een eigen (privé) balkon	O	O	O	O	O
Een eigen (privé) dakterras	O	O	O	O	O
De mogelijkheid om wanden in de woning te kunnen verschuiven (bijvoorbeeld om meer of minder kamers te creëren)	O	O	O	O	O
Uitklapbare meubels om objecten (zoals bijvoorbeeld een bed) tijdelijk op te bergen	O	O	O	O	O
Verhoogde plafonds van 3 meter	O	O	O	O	O
Brede gangen in de woning waar kinderen kunnen spelen	O	O	O	O	O
Een royale entree in het woongebouw waar kinderen kunnen spelen	O	O	O	O	O
Een brede galerij binnen of buiten waar kinderen kunnen spelen	O	O	O	O	O
Gezamenlijke speelvoorzieningen voor kinderen in het gebouw	O	O	O	O	O
Een (binnen)tuin/speelplaats alleen toegankelijk voor bewoners van het gebouw	O	O	O	O	O
Een gezamenlijk(e) dakterras/-tuin alleen toegankelijk voor bewoners van het gebouw	O	O	O	O	O
Een gezamenlijke fietsenstalling	O	O	O	O	O
Een openbare (binnen)tuin toegankelijk voor iedereen (ook voor mensen uit de buurt en toevallige passanten)	O	O	O	O	O
Een brede stoep waar kinderen kunnen spelen	O	O	O	O	O
Een autoluwe straat	O	O	O	O	O

→ *Na deze vraag door naar AFSLUITING [4]*

→ *Indien vraag [18] = A, B, C, D, I of → indien vraag [19] = A, B, C, D*

34. Welke onderwerpen heb je zelf nog waarvan je vindt dat de meergezinswoning aan zou moeten voldoen? (open vraag)

……

→ *Indien vraag [18] = A, B, C, D, I of → indien vraag [19] = A, B, C, D*

35. Welke onderwerpen heb je zelf nog waarvan je vindt dat het woongebouw met meergezinswoningen/appartementen aan zou moeten voldoen? (open vraag)

……

→ *Indien vraag [18] = A, B, C, D, I of → indien vraag [19] = A, B, C, D*

36. Welke onderwerpen heb je zelf nog waarvan je vindt dat de directe omgeving aan moet voldoen? (open vraag)

……

4 AFSLUITING

Dit was de laatste vraag; hartelijk dank voor jouw deelname.

D Testing assumptions logistic regression

Assumption 1 *"The dependent variable has to be binary"*

Not violated, because the dependent variable is binary, as it only has two options: a preference for a non-urban living environment (0) or the preference for an urban living environment (1).

Assumption 2 *"The observations have to be independent of each other (they should not come from repeated measurements"*

Not violated, because all observations are independent of each other due to the fact that all respondents have only filled out the survey once. Therefore the observations do not come from repeated measurements.

Assumption 3 *"Little or no multicollinearity among the independent variables is required"*

The Variance Inflation Indicator measures how much the variance of an estimated regression coefficient increases if the predictors are correlated. When the VIF is between 5 and 10, it means that there is high correlation. Higher than 10 means that the regression coefficients are poorly estimated due to multicollinearity. In both cases the assumption would be violated.

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-,037	,078		-,474	,636		
	Dummy_Age=15-25	-,031	,082	-,013	-,379	,705	,813	1,230
	Dummy_Age=26-35	,079	,041	,076	1,924	,055	,626	1,598
	Dummy_Age=46-55	,040	,046	,033	,865	,388	,669	1,495
	Dummy_Age=56 and older	-,017	,084	-,007	-,196	,845	,809	1,237
	Dummy_Aoc=6 up to 12 years	,034	,042	,034	,804	,422	,557	1,796
	Dummy_Aoc=13 up to 18 years	,005	,053	,005	,097	,923	,383	2,608
	Number of children	,031	,020	,054	1,564	,118	,808	1,237
	Dummy_Hh=Single-parent family	,099	,045	,081	2,213	,027	,738	1,356
	Dummy_Inc=34,500 to 38,500	,061	,057	,043	1,085	,278	,626	1,597
	Dummy_Inc=38,500 to 44,500	-,044	,060	-,029	-,734	,463	,647	1,546
	Dummy_Inc=44,500 to 52,500	-,045	,059	-,030	-,768	,442	,632	1,582
	Dummy_Inc=52,500 to 70,000	,004	,058	,003	,076	,939	,552	1,811
	Dummy_Inc=70,000 to 100,000	,005	,068	,003	,072	,942	,632	1,583
	Dummy_Inc=More than 100,000	,123	,082	,058	1,498	,135	,655	1,526
	Dummy_Inc=I do not want to say / no answer	,010	,062	,007	,170	,865	,659	1,517
	Dummy_Inc=I do not know	,098	,089	,038	1,104	,270	,841	1,189
	Dummy_Edu=I do not want to say	-,268	,201	-,043	-1,334	,183	,965	1,037
	Dummy_Edu=Primary school	,264	,152	,056	1,742	,082	,945	1,058
	Dummy_Edu=MAVO / LBO	,133	,052	,086	2,562	,011	,871	1,148
	Dummy_Edu=HBO / University	,051	,035	,052	1,465	,143	,787	1,271
	Dummy_His=Urban	,340	,032	,350	10,672	,000	,912	1,097
	Dummy_Soc=Important	,028	,033	,029	,849	,396	,864	1,157
	Dummy_Work=Important	,080	,033	,083	2,445	,015	,861	1,161
	Dummy_Size=100 to 125 m2	,014	,043	,012	,315	,753	,664	1,506
	Dummy_Size=150 to 175 m2	,000	,048	,000	,006	,995	,699	1,432
	Dummy_Size=175 to 200 m2	-,042	,057	-,026	-,741	,459	,770	1,298
	Dummy_Size=75 to 100 m2	,024	,051	,018	,474	,636	,646	1,549
	Dummy_Size=More than 200 m2	-,164	,072	-,079	-2,289	,022	,832	1,202
	Dummy_Green=Unimportant	,115	,034	,110	3,394	,001	,933	1,072

a. Dependent Variable: Dummy_Pref_LE_Urban=Urban

Not violated, because the VIF is for all variables in both regressions is below 5.

Assumption 4 *"The independent variables are linearly related to the log odds"*

Here, independent variables only refer to continuous variables, which means that the assumption is that the relationship between the continuous predictors and the log odds is linear. This can be tested by including interactions between the continuous predicts and their logs in the model. In this case, the only continuous predictor is *Child* (number of children). If the interaction is significant, then the assumption is violated.

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	Dummy_Age=15-25	-,085	,607	,020	1	,888	,918	,280	3,016
	Dummy_Age=26-35	,543	,480	1,278	1	,258	1,721	,671	4,413
	Dummy_Age=36-45	,105	,451	,054	1	,816	1,111	,459	2,686
	Dummy_Age=46-55	,345	,444	,605	1	,437	1,412	,592	3,371
	Dummy_Aoc=0 up to 5 years	-,067	,278	,059	1	,808	,935	,542	1,612
	Dummy_Aoc=6 up to 12 years	,141	,230	,377	1	,539	1,152	,734	1,808
	Number of children	,773	,418	3,416	1	,065	2,167	,954	4,922
	Dummy_Hh=Single-parent family	,512	,229	4,973	1	,026	1,668	1,064	2,616
	Dummy_Inc=Less than 34,500	-,490	,457	1,148	1	,284	,613	,250	1,502
	Dummy_Inc=34,500 to 38,500	-,166	,473	,123	1	,726	,847	,335	2,141
	Dummy_Inc=38,500 to 44,500	-,749	,490	2,343	1	,126	,473	,181	1,234
	Dummy_Inc=44,500 to 52,500	-,743	,484	2,357	1	,125	,476	,184	1,228
	Dummy_Inc=52,500 to 70,000	-,457	,474	,929	1	,335	,633	,250	1,604
	Dummy_Inc=70,000 to 100,000	-,420	,508	,682	1	,409	,657	,243	1,779
	Dummy_Inc=More than 100,000	,196	,562	,122	1	,727	1,217	,404	3,660
	Dummy_Inc=I do not want to say / no answer	-,426	,488	,761	1	,383	,653	,251	1,701
	Dummy_Edu=I do not want to say	-1,563	1,161	1,810	1	,179	,210	,022	2,042
	Dummy_Edu=Primary school	,931	,877	1,128	1	,288	2,538	,455	14,154
	Dummy_Edu=MAVO / LBO	,387	,280	1,917	1	,166	1,473	,851	2,550
	Dummy_Edu=HAVO / VWO / MBO	-,301	,185	2,650	1	,104	,740	,516	1,063
	Dummy_His=Urban	1,643	,168	95,694	1	,000	5,173	3,722	7,190
	Dummy_Soc=Important	,127	,172	,552	1	,458	1,136	,811	1,590
	Dummy_Work=Important	,438	,174	6,372	1	,012	1,550	1,103	2,178
	Dummy_Size=100 to 125 m2	1,181	,459	6,631	1	,010	3,258	1,326	8,004
	Dummy_Size=125 to 150 m2	1,070	,455	5,522	1	,019	2,915	1,194	7,117
	Dummy_Size=150 to 175 m2	1,099	,467	5,537	1	,019	3,001	1,201	7,495
	Dummy_Size=175 to 200 m2	,836	,498	2,816	1	,093	2,307	,869	6,126
	Dummy_Size=75 to 100 m2	1,192	,482	6,126	1	,013	3,295	1,282	8,472
	Dummy_Green=Unimportant	,631	,179	12,436	1	,000	1,879	1,323	2,668
	Interaction_Child	-1,218	,811	2,258	1	,133	,296	,060	1,449
	Constant	-3,612	,858	17,721	1	,000	,027		

a. Variable(s) entered on step 1: Dummy_Age=15-25, Dummy_Age=26-35, Dummy_Age=36-45, Dummy_Age=46-55, Dummy_Aoc=0 up to 5 years, Dummy_Aoc=6 up to 12 years, Number of children, Dummy_Hh=Single-parent family, Dummy_Inc=Less than 34,500, Dummy_Inc=34,500 to 38,500, Dummy_Inc=38,500 to 44,500, Dummy_Inc=44,500 to 52,500, Dummy_Inc=52,500 to 70,000, Dummy_Inc=70,000 to 100,000, Dummy_Inc=More than 100,000, Dummy_Inc=I do not want to say / no answer, Dummy_Edu=I do not want to say, Dummy_Edu=Primary school, Dummy_Edu=MAVO / LBO, Dummy_Edu=HAVO / VWO / MBO, Dummy_His=Urban, Dummy_Soc=Important, Dummy_Work=Important, Dummy_Size=100 to 125 m2, Dummy_Size=125 to 150 m2, Dummy_Size=150 to 175 m2, Dummy_Size=175 to 200 m2, Dummy_Size=75 to 100 m2, Dummy_Green=Unimportant, Interaction_Child.

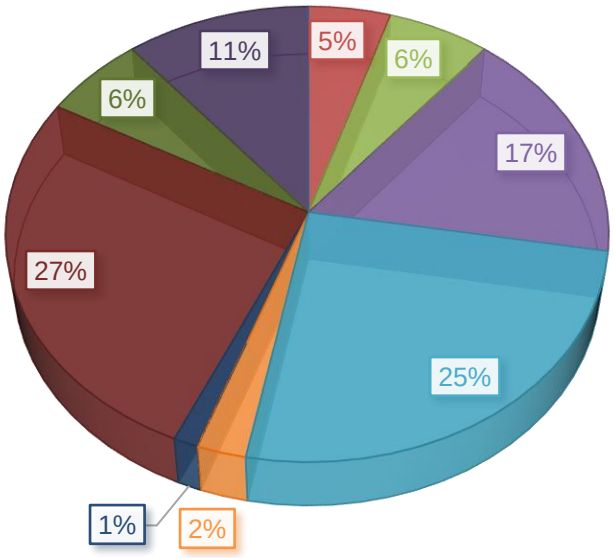
Not violated, because interaction variable (*Interaction_Child*) is in the regression insignificant.

Assumption 5 *"A large sample size is required"*

Not violated, as the benefits in the precision of a bigger sample size begin to level off at a sample size of 150 to 200 (Fowler, 2008), the sample size of 848 respondents can be considered as large enough.

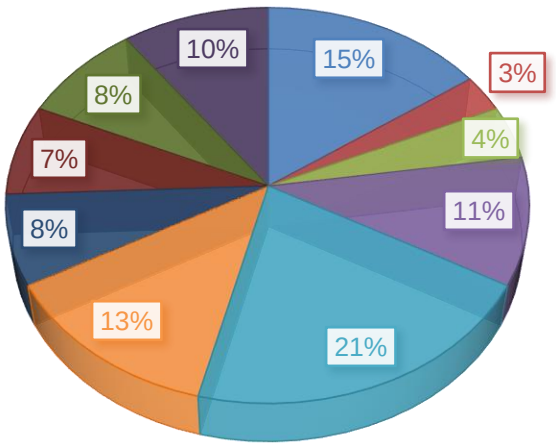
E Reasons for preferred living environment

TO THE CITY CENTRE



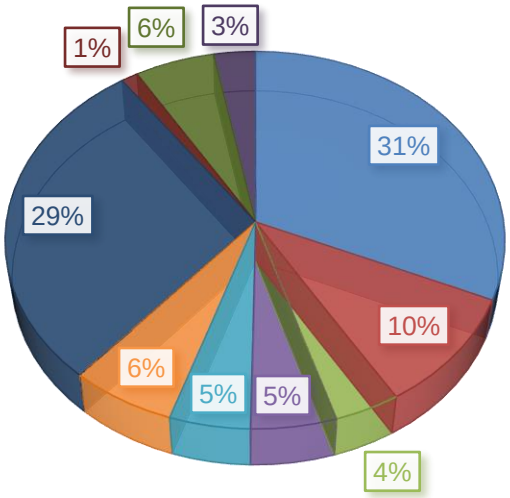
- Child-friendly
- I have lived or I am currently living there
- Nice/pleasant/beautiful
- Proximity to amenities
- Proximity to city centre
- Quiet/space/nature
- Rush/sociability
- Other
- I do not know/no answer

TO A CITY DISTRICT CLOSELY LOCATED TO THE CITY CENTRE



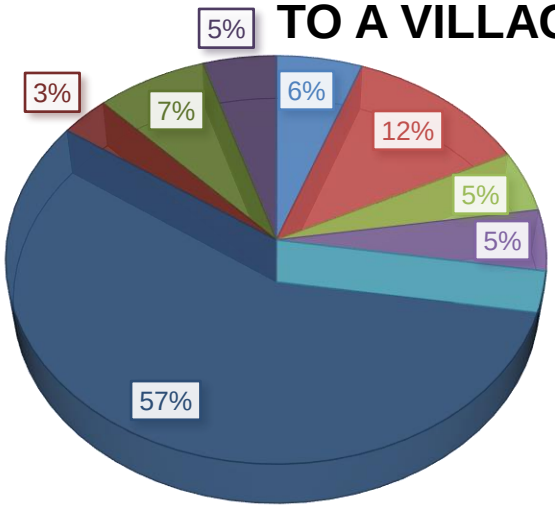
- Amenities close by, but also nature/space/quiet
- Child-friendly
- I have lived or I am currently living there
- Nice/pleasant/beautiful
- Proximity to amenities
- Proximity to city centre
- Quiet/space/nature
- Rush/sociability
- Other
- I do not know/no answer

TO THE SUBURBS



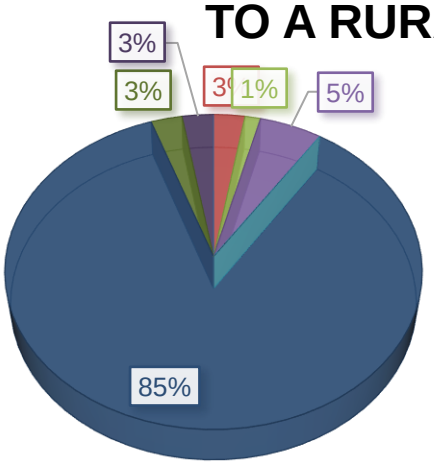
- Amenities close by, but also nature/space/quiet
- Child-friendly
- I have lived or I am currently living there
- Nice/pleasant/beautiful
- Proximity to amenities
- Proximity to city centre
- Quiet/space/nature
- Rush/sociability
- Other
- I do not know/no answer

TO A VILLAGE



- Amenities close by, but also nature/space/quiet
- Child-friendly
- I have lived or I am currently living there
- Nice/pleasant/beautiful
- Quiet/space/nature
- Rush/sociability
- Other
- I do not know/no answer

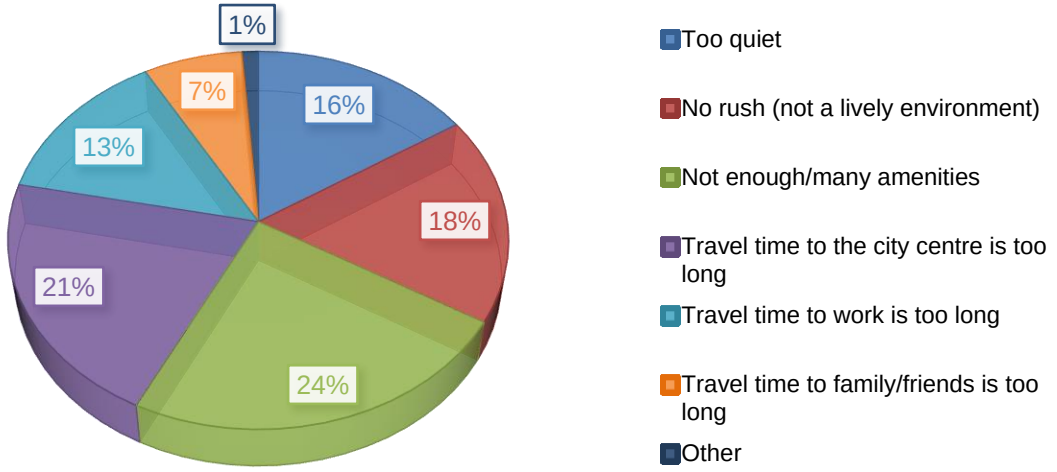
TO A RURAL AREA



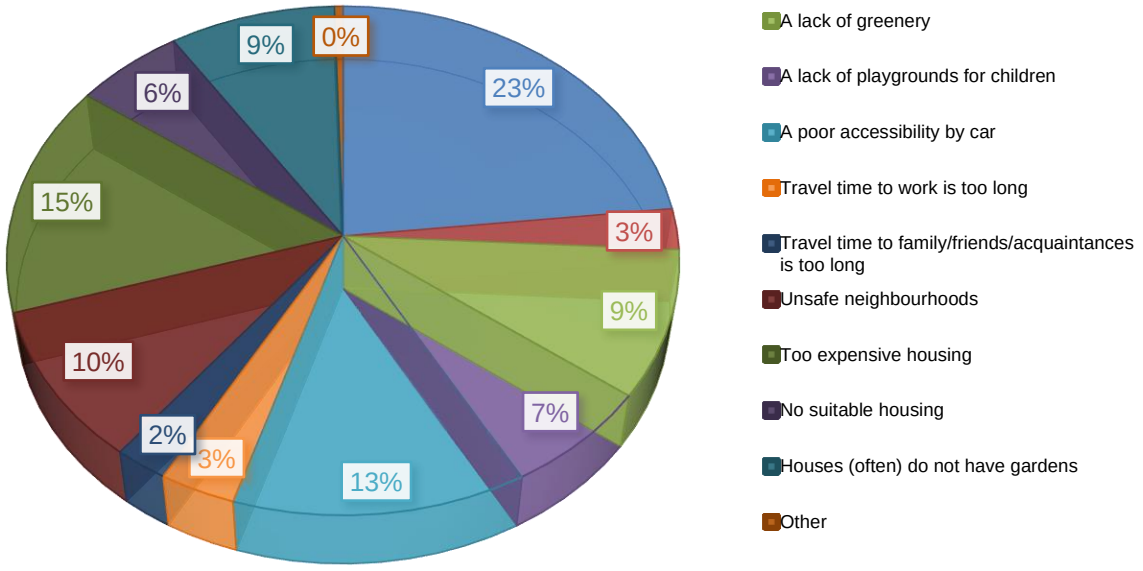
- Child-friendly
- I have lived or I am currently living there
- Nice/pleasant/beautiful
- Quiet/space/nature
- Other
- I do not know/no answer

F Reasons for not preferring a certain living environment

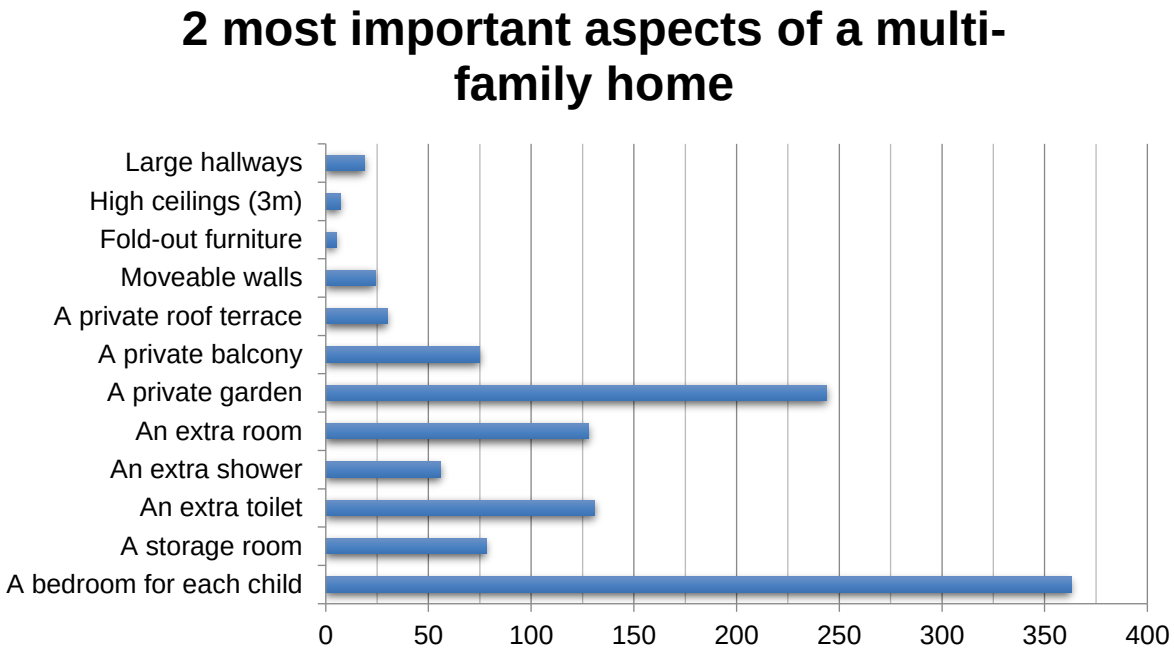
REASONS FOR NOT PREFERRING A NON-URBAN LIVING ENVIRONMENT

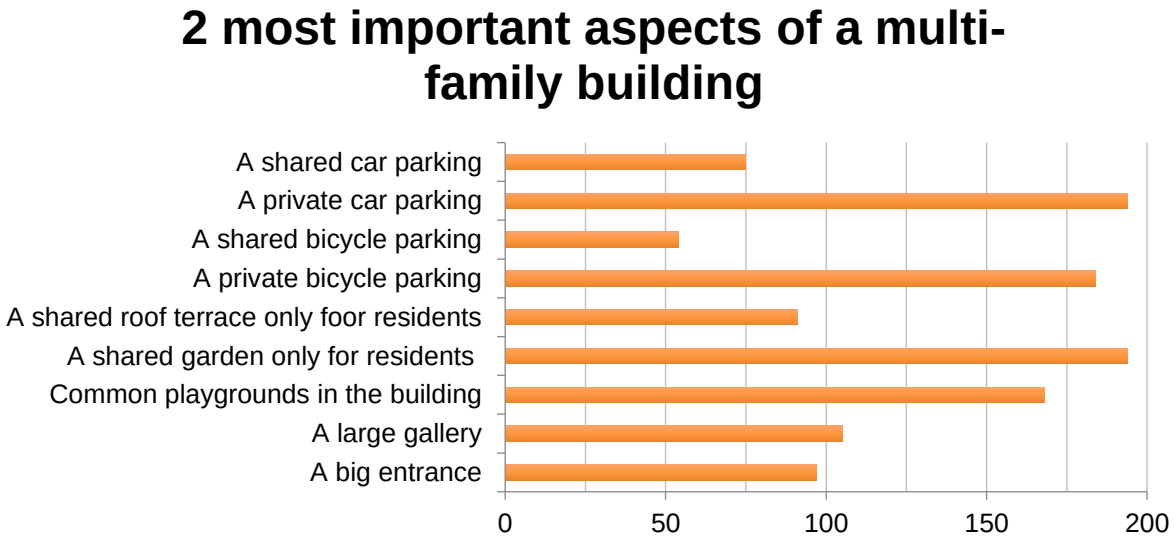


REASONS FOR NOT PREFERRING AN URBAN LIVING ENVIRONMENT



G Two most important aspects in multi-family home, multi-family building, and its surroundings





H SPSS syntax output file

```
GET DATA
  /TYPE=XLSX
  /FILE='X:\My Desktop\Real Estate\Thesis\COPY\COPY_Data_bestand_sample -
ENGLISH.xlsx'
  /SHEET=name 'Blad1'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.

SAVE OUTFILE='X:\My Desktop\Real Estate\Thesis\COPY\COPY_data_thesis.sav'
  /COMPRESSED.

RECODE Householdcomposition ('Couple with child(ren)'='1') ('Single-parent
family'='2').
EXECUTE.

RECODE Ageoldestchild ('0 up to 5 years'='1') ('6 up to 12 years'='2') ('13
up to 18 years'='3').
EXECUTE.
DATASET ACTIVATE DataSet1.

RECODE Householdincome ('Less than 34,500'='1') ('34,500 to 38,500'='2')
('38,500 to '+'44,500'='3') ('44,500 to 52,500'='4') ('52,500 to
70,000'='5') ('70,000 to 100,000'='6')
    ('More than 100,000'='7') ('I do not want to say / no answer'='8') ('I
do not know'='9').
EXECUTE.
DATASET ACTIVATE DataSet1.
```

```
RECODE Education ('I do not want to say'='1') ('Primary school'='2') ('MAVO
/ LBO'='3') ('HAVO / '+ 'VWO / MBO'='4') ('HBO / University'='5').
EXECUTE.

RECODE Residentialhistory ('1. In the city centre'='1') ('2. In a city
district closely located '+ 'to the city centre'='2') ('3. In the
suburbs'='3') ('4. In a village'='4') ('5. In a rural '+
    'area'='5').
EXECUTE.
DATASET ACTIVATE DataSet1.

RECODE Preferredlivingenvironment ('1. To the city centre'='1') ('2. To a
city district closely '+'located to the city centre'='2') ('3. To the
suburbs'='3') ('4. To a village'='4') ('5. To a '+
    'rural area'='5').
EXECUTE.
DATASET ACTIVATE DataSet1.

RECODE Mun ('Amsterdam'='1') ('Den Haag'='1') ('Rotterdam'='1')
('Utrecht'='1') (ELSE='2').
EXECUTE.

RECODE Preferredtenure Currenttenure ('Owner-occupied housing'='1')
('Social-rental '+'housing'='2') ('Private-rental housing'='3').
EXECUTE.
DATASET ACTIVATE DataSet1.

RECODE Preferredtypeofhousing ('Apartment'='1') ('Gallery flat / portico
flat'='2') ('Ground '+'floor apartment / overhead apartment'='3')
('Maisonnette (= apartment of 2 or more '+'floors)'='4') ('Terraced
housing'='5') ('Patio housing / bungalow'='6') ('Semi-detached
'+'housing'='7') ('Detached housing'='8') (ELSE='9').
EXECUTE.

SAVE OUTFILE='X:\My Desktop\Real Estate\Thesis\COPY\COPY_data_thesis.sav'
  /COMPRESSED.

RECODE Residentialhistory Preferredlivingenvironment ('1'=0) ('2'=0)
(ELSE=1) INTO Dummy_His
    Dummy_Pref_LE.
VARIABLE LABELS  Dummy_His 'Dummy_His' /Dummy_Pref_LE 'Dummy_Pref_LE'.
EXECUTE.

RECODE Dummy_His (0=1) (1=2).
EXECUTE.

RECODE Workboth Socialembeddednessboth Greeneryboth Playgroundsboth ('1'=0)
('2'=0) ('3'=0)
    (ELSE=1) INTO Dummy_Work Dummy_Soc Dummy_Green Dummy_Play.
VARIABLE LABELS  Dummy_Work 'Dummy_Work' /Dummy_Soc 'Dummy_Soc'
/Dummy_Green 'Dummy_Green'
    /Dummy_Play 'Dummy_Play'.
```

```
RECODE Age (15 thru 25=1) (26 thru 35=2) (36 thru 45=3) (46 thru 55=4) (56
thru Highest=5) INTO Age_Cat.
VARIABLE LABELS  Age_Cat 'Age_categories'.
EXECUTE.

RECODE Schoolurbanpreference Childcareurbanpreference
Dailyshopsurbanpreference
    Nondailyshopsurbanpreference Sportandleisurefacilitiesurbanpreference
    Culturalservicesurbanpreference Cateringindustryurbanpreference
Medicalservicesurbanpreference
    Busmetrotramurbanpreference Trainurbanpreference Eventsurbanpreference
(1 thru 3=1) (4 thru 5=2)
    (ELSE=SYSMIS) INTO Dich_School Dich_childcare Dich_dailyshops
Dich_nondailyshops Dich_SportLeisure
    Dich_cultural Dich_catering Dich_medical Dich_busmetrotram Dich_train
Dich_events.
VARIABLE LABELS  Dich_School 'School' /Dich_childcare 'Childcare'
/Dich_dailyshops 'DailyShops'
    /Dich_nondailyshops 'NonDailyShops' /Dich_SportLeisure 'SportLeisure'
/Dich_cultural
    'CulturalServices' /Dich_catering 'Catering' /Dich_medical
'MedicalServices' /Dich_busmetrotram
    'BusMetroTram' /Dich_train 'Train' /Dich_events 'Events'.
EXECUTE.

RECODE Trafficsafetynonurbanpreference
Safetyneighbourhoodnonurbanpreference
    Familiesneighbourhoodnonurbanpreference (1 thru 3=1) (4 thru 5=2)
(ELSE=SYSMIS) INTO
    Dich_TrafficSafety Dich_SafetyNeighbourhood Dich_FamiliesNeighbourhood.
VARIABLE LABELS  Dich_TrafficSafety 'TrafficSafety'
/Dich_SafetyNeighbourhood 'SafetyNeighbourhood'
    /Dich_FamiliesNeighbourhood 'FamiliesNeighbourhood'.
EXECUTE.

RECODE Socialembeddednessurbanpreference (1 thru 3=1) (4 thru 5=2)
(ELSE=SYSMIS) INTO Dich_Social.
VARIABLE LABELS  Dich_Social 'Social_urban'.
EXECUTE.

RECODE Preferredtypeofhousing ('1'=1) ('2'=2) ('3'=3) ('4'=4) ('5'=5)
('6'=5) ('7'=5) ('8'=5)('9'=6) INTO Dich_Type_housing.
VARIABLE LABELS  Dich_Type_housing 'Housing_type'.
EXECUTE.

RECODE BedroomforeachchildMF StorageroomMF ExtratoiletMF ExtrashowerMF
ExtraroomMF PrivategardenMF PrivatebalconyMF PrivateroofterraceMF
MoveablewallsMF FoldoutfurnitureMF HighceilingsMF LargehallwaysMF
LargeentranceMF LargegalleryMF SharedplaygroundsinthebuildingMF
SharedgardenplaygroundonlyforresidentsMF
SharedroofterraceonlyforresidentsMF PrivatebicycleparkingMF
SharedbicycleparkingMF PrivatecarparkingMF SharedcarparkingMF
```

```
    PublicgardenMF LargepavementMF CarfreestreetMF StreetbicycleparkingMF
ObjectsasplayobjectsMF (SYSMIS=SYSMIS) (1 thru 3=1) (4 thru 5=2) INTO
Dich_bed Dich_storage Dich_toilet Dich_shower Dich_extraroom
Dich_privategarden Dich_privatebalcony Dich_privateroof Dich_movewall
Dich_fold Dich_ceiling Dich_hallway Dich_entrance Dich_gallery
Dich_sharedplay Dich_semisharedplay Dich_sharedroof Dich_privatecycle
Dich_sharedcycle Dich_privatecar Dich_sharedcar Dich_publicgarden
    Dich_pavement Dich_carfree Dich_streetcycle Dich_playobject.
VARIABLE LABELS  Dich_bed 'Dich_bed' /Dich_storage 'Dich_storage'
/Dich_toilet 'Dich_toilet'/Dich_shower 'Dich_shower' /Dich_extraroom
'Dich_extraroom' /Dich_privategarden 'Dich_privategarden'
/Dich_privatebalcony 'Dich_privatebalcony' /Dich_privateroof
'Dich_privateroof' /Dich_movewall 'Dich_movewall' /Dich_fold 'Dich_fold'
/Dich_ceiling 'Dich_ceiling' /Dich_hallway 'Dich_hallway' /Dich_entrance
'Dich_entrance' /Dich_gallery 'Dich_gallery' /Dich_sharedplay
'Dich_sharedplay' /Dich_semisharedplay Dich_semisharedplay'/Dich_sharedroof
'Dich_sharedroof' /Dich_privatecycle 'Dich_privatecycle' /Dich_sharedcycle
    'Dich_sharedcycle' /Dich_privatecar 'Dich_privatecar' /Dich_sharedcar
'Dich_sharedcar'/Dich_publicgarden 'Dich_publicgarden' /Dich_pavement
'Dich_pavement' /Dich_carfree 'Dich_carfree'/Dich_streetcycle
Dich_streetcycle' /Dich_playobject 'Dich_playobject'.
EXECUTE.

SAVE OUTFILE='X:\My Desktop\Real Estate\Thesis\COPY\COPY_data_thesis.sav'
  /COMPRESSED.

SPSSINC CREATE DUMMIES VARIABLE=Preferredhousingsize
ROOTNAME1=DummySize
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Size".

SPSSINC CREATE DUMMIES VARIABLE=Inc
ROOTNAME1=DummyInc
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Income".

SPSSINC CREATE DUMMIES VARIABLE=Aoc
ROOTNAME1=DummyAoc
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="AOC".

SPSSINC CREATE DUMMIES VARIABLE=Edu
ROOTNAME1=DummyEdu
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="EDU".

SPSSINC CREATE DUMMIES VARIABLE=Hh
ROOTNAME1=DummyHh
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="HouseholdComposition".

SPSSINC CREATE DUMMIES VARIABLE=Dummy_His
ROOTNAME1=DummyHis
```

```
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="ResHis".

RECODE Dummy_Work Dummy_Soc Dummy_Green Dummy_Play (0=1) (1=2).
EXECUTE.
SPSSINC CREATE DUMMIES VARIABLE=Dummy_Work
ROOTNAME1=Work
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Work".

SPSSINC CREATE DUMMIES VARIABLE=Dummy_Soc
ROOTNAME1=Soc
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Social".

SPSSINC CREATE DUMMIES VARIABLE=Dummy_Green
ROOTNAME1=Green
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Green".

SPSSINC CREATE DUMMIES VARIABLE=Dummy_Play
ROOTNAME1=Play
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Play".

SPSSINC CREATE DUMMIES VARIABLE=Dummy_Pref_LE_Urban
ROOTNAME1=Pref_Liv_Env
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Pref_Liv_Env".

SPSSINC CREATE DUMMIES VARIABLE=Age_Cat
ROOTNAME1=Age
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Dummy_Age".

SPSSINC CREATE DUMMIES VARIABLE=Existingnewlybuilthousing
ROOTNAME1=HousingAge
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Dummy_HousingAge".

SPSSINC CREATE DUMMIES VARIABLE=Preferredtenure
ROOTNAME1=Dummy_PrefTenure
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Dummy_".

SPSSINC CREATE DUMMIES VARIABLE=Preferredpruchaseprice
ROOTNAME1=Dummy_Price
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
MACRONAME1="Dummy_Price".

SPSSINC CREATE DUMMIES VARIABLE=Dich_Type_housing
ROOTNAME1=Dummy_Type
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO
```

```
MACRONAME1="Dummy_HousingType".

SAVE OUTFILE='X:\My Desktop\Real Estate\Thesis\COPY\COPY_data_thesis.sav'
  /COMPRESSED.

T-TEST GROUPS=Dummy_Pref_LE_Urban(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=Child
  /CRITERIA=CI(.95).

SAVE OUTFILE='X:\My Desktop\Real Estate\Thesis\COPY\COPY_data_thesis.sav'
  /COMPRESSED.

CROSSTABS
  /TABLES=DummyAoc_1 DummyAoc_2 DummyAoc_3 DummyHh_1 DummyHh_2 DummyInc_1
DummyInc_2 DummyInc_3
    DummyInc_4 DummyInc_5 DummyInc_6 DummyInc_7 DummyInc_8 DummyInc_9
DummyEdu_1 DummyEdu_2 DummyEdu_3
    DummyEdu_4 DummyEdu_5 DummyHis_1 DummyHis_2 Soc_1 Soc_2 Work_1 Work_2
DummySize_1 DummySize_2
    DummySize_3 DummySize_4 DummySize_5 DummySize_6 Play_1 Play_2 Green_1
Green_2 BY Pref_Liv_Env_2
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

SAVE OUTFILE='X:\My Desktop\Real Estate\Thesis\COPY\COPY_data_thesis.sav'
  /COMPRESSED.

CROSSTABS
  /TABLES=Age_1 Age_2 Age_3 Age_4 Age_5 BY Pref_Liv_Env_2
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

COMPUTE filter_$=(Pref_Liv_Env_2 = 1).
VARIABLE LABELS filter_$ 'Pref_Liv_Env_2 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
CROSSTABS
  /TABLES=Dich_School BY Pref_LE
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

CROSSTABS
  /TABLES=Dich_childcare Dich_dailyshops Dich_nondailyshops
Dich_SportLeisure Dich_cultural
```

```
    Dich_catering Dich_medical Dich_busmetrotram Dich_train Dich_events BY
Pref_LE
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

COMPUTE filter_$=(Pref_Liv_Env_1 = 1).
VARIABLE LABELS filter_$ 'Pref_Liv_Env_1 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
CROSSTABS
  /TABLES=Dich_TrafficSafety Dich_SafetyNeighbourhood
Dich_FamiliesNeighbourhood BY Pref_LE
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

COMPUTE filter_$=(Pref_Liv_Env_2 = 1).
VARIABLE LABELS filter_$ 'Pref_Liv_Env_2 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
CROSSTABS
  /TABLES=Dich_Social BY Pref_LE
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

FILTER OFF.
USE ALL.
EXECUTE.

CROSSTABS
  /TABLES=DummyHousingAge_1 DummyHousingAge_2 DummyHousingAge_3
Dummy_PrefTenure_1
    Dummy_PrefTenure_2 Dummy_PrefTenure_3 Dummy_Price_2 Dummy_Price_3
Dummy_Price_4 Dummy_Price_5
    Dummy_Price_6 Dummy_Price_7 Dummy_Price_8 Dummy_Price_9 Dummy_Type_1
Dummy_Type_2 Dummy_Type_3
    Dummy_Type_4 Dummy_Type_5 Dummy_Type_6 BY Mun
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

CROSSTABS
```

```
  /TABLES=DummySize_1 DummySize_2 DummySize_3 DummySize_4 DummySize_5
DummySize_6 BY Mun
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

COMPUTE filter_$=(Dummy_PrefTenure_1 = 1).
VARIABLE LABELS filter_$ 'Dummy_PrefTenure_1 = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
CROSSTABS
  /TABLES=Dummy_Price_2 Dummy_Price_3 Dummy_Price_4 Dummy_Price_5
Dummy_Price_6 Dummy_Price_7
    Dummy_Price_8 Dummy_Price_9 BY Mun
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

FILTER OFF.
USE ALL.
EXECUTE.

CROSSTABS
  /TABLES=Dich_bed BY Mun
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

CROSSTABS
  /TABLES=Dich_storage Dich_toilet Dich_shower Dich_extraroom
Dich_privategarden
    Dich_privatebalcony Dich_privateroof Dich_movewall Dich_fold
Dich_ceiling BY Mun
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

CROSSTABS
  /TABLES=Dich_hallway BY Mun
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

CROSSTABS
  /TABLES=Dich_entrance Dich_gallery Dich_sharedplay Dich_semisharedplay
Dich_sharedroof
```

```
    Dich_privatecycle Dich_sharedcycle Dich_privatecar Dich_sharedcar
Dich_publicgarden Dich_pavement
    Dich_carfree Dich_streetcycle Dich_playobject BY Mun
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

CROSSTABS
  /TABLES=DummyHousingAge_1 DummyHousingAge_2 DummyHousingAge_3
Dummy_PrefTenure_1
    Dummy_PrefTenure_2 Dummy_PrefTenure_3 Dummy_Price_1 Dummy_Price_2
Dummy_Price_3 Dummy_Price_4
    Dummy_Price_5 Dummy_Price_6 Dummy_Price_7 Dummy_Price_8 Dummy_Price_9
Dummy_Type_1 Dummy_Type_2
    Dummy_Type_3 Dummy_Type_4 Dummy_Type_5 Dummy_Type_6 BY Pref_Liv_Env_2
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

CROSSTABS
  /TABLES=Dich_bed Dich_storage Dich_toilet Dich_shower Dich_extraroom
Dich_privategarden
    Dich_privatebalcony Dich_privateroof Dich_movewall Dich_fold
Dich_ceiling Dich_hallway BY
    Pref_Liv_Env_2
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

CROSSTABS
  /TABLES=Dich_entrance Dich_gallery Dich_sharedplay Dich_semisharedplay
Dich_sharedroof
    Dich_privatecycle Dich_sharedcycle Dich_privatecar Dich_sharedcar
Dich_publicgarden Dich_pavement
    Dich_carfree Dich_streetcycle Dich_playobject BY Pref_Liv_Env_2
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA COLLIN TOL
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Pref_Liv_Env_2
  /METHOD=ENTER Age_1 Age_2 Age_3 Age_4 Age_5 DummyAoc_1 DummyAoc_2
DummyAoc_3 Child DummyHh_2
    DummyInc_1 DummyInc_2 DummyInc_3 DummyInc_4 DummyInc_5 DummyInc_6
DummyInc_7 DummyInc_8 DummyInc_9
    DummyEdu_1 DummyEdu_2 DummyEdu_3 DummyEdu_4 DummyEdu_5 DummyHis_1 Soc_2
Work_2 DummySize_1
```

```
    DummySize_2 DummySize_3 DummySize_4 DummySize_5 DummySize_6 Green_1.

LOGISTIC REGRESSION VARIABLES Pref_Liv_Env_2
  /METHOD=ENTER Age_1 Age_2 Age_3 Age_4 Age_5 DummyAoc_1 DummyAoc_2
DummyAoc_3 Child DummyHh_1
    DummyHh_2 DummyInc_1 DummyInc_2 DummyInc_3 DummyInc_4 DummyInc_5
DummyInc_6 DummyInc_7 DummyInc_8
    DummyInc_9 DummyEdu_1 DummyEdu_2 DummyEdu_3 DummyEdu_4 DummyEdu_5
DummyHis_1 DummyHis_2 Soc_1 Soc_2
    Work_1 Work_2 Child_LN
  /PRINT=GOODFIT CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Pref_Liv_Env_2
  /METHOD=ENTER Age_1 Age_2 Age_3 Age_4 Age_5 DummyAoc_1 DummyAoc_2
DummyAoc_3 Child DummyHh_2
    DummyInc_1 DummyInc_2 DummyInc_3 DummyInc_4 DummyInc_5 DummyInc_6
DummyInc_7 DummyInc_8 DummyInc_9
    DummyEdu_1 DummyEdu_2 DummyEdu_3 DummyEdu_4 DummyEdu_5 DummyHis_1 Soc_2
Work_2 DummySize_1
    DummySize_2 DummySize_3 DummySize_4 DummySize_5 Green_1
  /CLASSPLOT
  /PRINT=GOODFIT CORR CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

SAVE OUTFILE='X:\My Desktop\Real Estate\Thesis\COPY\COPY_data_thesis.sav'
  /COMPRESSED.
```