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Staying in the city or moving to the suburbs? Unravelling the moving behaviour of young families in the four big cities in the Netherlands

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Abstract
In many postindustrial cities in the Global North, increasing families seem to choose to stay in the city rather than move to the suburbs. This might imply that residential preferences of young families shift from suburban to more urban. In this paper, the moving behaviour of young families in the four largest cities in the Netherlands is analysed. The moving behaviour is measured with register data and analysed with the Oaxaca-Blinder decomposition technique and with logistic regression techniques. The results show that young families broken down by residential biography and income have very different moving behaviours in their choice for staying in the city or moving to the region around the city. The changes in the outmigration of young families from the city to the region are not necessarily related to changing residential preferences, but more related to changes in the composition within the group of young families. The growth of higher-income families in cities seem to be primarily explained by the changing composition of city dwellers before family formation and not so much by a more urban orientation in their moving behaviour. Changes in moving patterns through time and the differences between the four cities seem to be related to the differences in the urban economy and housing supply. Especially in Amsterdam, the lack of larger family home drives young families to the suburbs. When cities and suburban regions want to be attractive for young families, the size of the available dwellings is the most important aspect.

KEYWORDS
demographics, housing supply, metropolitan regions, residential biographies, young families

1 | INTRODUCTION

Many postindustrial cities in the Global North, especially those with universities, are characterised by a high in-migration of young people (students, young people at the start of their career) and a high outmigration of people in their late 20s and 30s and (their) young children (Sanchez & Dawkins, 2001). The city is the place where people meet each other, and couples and families are formed. Family formation is often a trigger for moving (Mulder, 1996). Ever since wealth is increasing among the growing middle class, many young (middle-class) families are confronted by the choice of staying in the city or moving to the region around the city (Bridge, 2003; Goodman, 1979; Rossi, 1955). This decision is often made when the children are still young and do not yet
attend school (Kulu & Steele, 2013). The growth of the suburbs in the Global North in the second part of the 20th century depended in the past for a large part on families moving from the city to the suburbs. But this clear relationship between cities and suburbs has changed, at least in some suburban areas (Tzaninis & Boterman, 2018).

The changing modes of production in the economy are an important driver for the growth of cities (Storper & Scott, 2009). Cities have become wealthier, and many of them have undergone processes of gentrification. Gentrification is therefore an important element in understanding the changes postindustrial cities go through. The gentrification literature describes how the middle classes reclaim the city (Hamnett & Butler, 2013). Often, this reclaiming of the city is portrayed as a reaction to the monotony of the suburbs: ‘How do we account for the movement into old neighbourhoods of, say, middle-class people who have the means to live where ever they choose, who by any demographic measure would two decades ago have settled in suburbs, and today seek the city?’ (Caulfield, 1994, p. 133). The early gentrification literature spoke mainly about small households in specific professions (young single households, the creative sector), but later studies showed that the phenomenon was diversifying. Also, more middle-class families seem to become a growing phenomenon in the city (Boterman, Karsten, & Musterd, 2010). These gentrifying families express the need to stay in the city; they live a life that in their view would not be possible in a suburb (Karsten, 2007). This literature suggests that there is a change in residential preferences for middle-class families: from more suburban to more urban. But the question is whether there is really a change in residential preferences.

The literature on contemporary processes of urbanisation also recognises that cities are growing, but is less definite on the argument that this is caused by a change in residential preferences. It points to demographic transformations and argues that the growth of cities is primarily related to changes in the demographic and socio-economic composition of the population (Kabisch & Haase, 2011; Kabisch, Haase, & Haase, 2010). The diversification of household types and family formation due to the ‘second demographic transition’ (declining fertility rates, postponement of child-bearing and marriage, growing household numbers, smaller household sizes and nontraditional household structures) are all associated with a more urban preference (Buzar, Ogden, & Hall, 2005). But it also assumes that the preference of the traditional middle-class family with two cohabiting partners did not change and is still more suburban.

The literature on stated residential preferences also suggests a high degree of stability of preferences for urban or suburban living. Residential preferences do vary through the life-course, but they are quite stable through time (Booi & Boterman, 2019; Fuguitt & Brown, 1990). Families still seem to have a strong preference for suburban living (De Groot, Van Dam, & Van Amsterdam, 2015). This begs the question whether there is a change in residential mobility for young families (households with two cohabiting partners and young children not older than 5 years old), do they less often choose to move to the municipalities in the region of the city and rather stay in the city? Or is the change mainly caused by a change in the demographic and socio-economic composition of young families?

This paper addresses the following research questions:

What is the demographic, socio-economic and socio-cultural composition of young families in the four big cities in the Netherlands and how does it change through time?

To what extent can the change in outmigration of young families to the municipalities in the region around the city be explained by changes in the composition of these young families in these cities?

What are the odds that a young family with specific demographic, socio-economic and socio-cultural characteristics moves from these cities to the municipalities in the region around the city and how has it changed through time?

2 | THEORETICAL FRAMEWORK

The life course approach is helpful to understand moving behaviour of families (Bailey, 2009; Clark & Lisowksi, 2018; Mulder, 1996). Residential moves are often related to household transitions. Young families are typically looking for better housing and neighbourhood conditions (Gambaro, Joshi, & Lupton, 2017). The timing is very precise, when families move it is often just before or just after the birth of the first child (Kulu & Steele, 2013). When the children are older, the mobility rate drops significantly. Young families not only look for larger homes that better suit their increasing family size (Dieleman, 2001) but also often a transition to home-ownership is made, typically before family-formation (Mulder, 2006).

The housing career of households is related to the job career (Clark, Deurloo, & Dieleman, 2003). People often try to match their own social status with the status of the neighbourhood (Clark, van Ham, & Coulter, 2014). The phase in which people start a family often coincides with the phase upward mobility is realised. A move to match the new housing needs as a family will therefore also be linked to a move to a neighbourhood that matches the (improved) social status. Schaake, Burgers, and Mulder (2014) show that this also is the case for ethnic minority groups, although in a lighter pace.

In terms of location many families still prefer suburban locations (De Groot, et al., 2015). An important part of that suburban ideal is associated with the geography of housing supply. A key reason to move to suburban locations is the availability of more spacious, more affordable, owner-occupied housing (Hayden, 2003). Yet not every young family can afford to buy a home. Lower-income or unstable-income families remain more dependent on the (social) rental sector, which is generally—so far—mainly found in more urban areas and in new towns. Moving from the city to the suburbs is therefore not only about housing preferences but also about housing constraints (Boterman, Manting, & Musterd, 2017). Many central cities in the Global North are becoming more expensive due to gentrification, and suburbs are getting both more socio-economically and ethnically diverse and may even gentrify (Paccoud & Mace, 2018). Most suburbs are no longer the monofunctional residential areas for middle-class families, as they are portrayed (Bourne, 1996; Keil, 2018). These
variegated trends cause a shift of the geography of where affordable family housing can be found in metropolitan areas (Hochstenbach & Musterd, 2018).

The relationship between (changing) supply and residential preferences is however more complex. Stated residential preferences often reflect the actual possibilities households have (Clark & Dieleman, 1996). Furthermore, (underlying) preferences may come to the fore when new possibilities in housing arise (Storper & Manville, 2006). In other words, the different trade-offs that are made between price, tenure, location and other aspects of the home are affected by contextual changes at various levels. For instance, if more urban owner-occupied single dwellings are built, this might tip the balance for some families to prefer urban locations, making them to decide to rather stay in the city. The choice for staying in the city or moving to the municipalities around the city is therefore not only about residential location but also about housing supply in terms of price, size, tenure and other factors.

2.1 Diversity of families

Young families in the city are not a homogeneous group. They are differentiated by their residential biographies, their preferences and their resources, affecting their moving behaviour. There is for instance quite some evidence that people when they want to settle down move back or near to the place they grew up (Feijten, Hooimeijer, & Mulder, 2008) or where their family lives (Blaauboer, 2011). The place of birth and where people grew up thus influences the choice of staying or leaving the city as a family. However, the longer people stay in one place, the less likely it is that they will move (Huff & Clark, 1978). City dwellers who originally came to the city for education or work typically stayed for quite some time (Butler & Hamnett, 2012; Tano, 2014). New urbanites may have become used to the urban lifestyle, invested in social networks and develop also symbolic and mental attachment to the city, making them inert and less likely to leave (Fischer & Malmberg, 2001). People who grew up in the city are expected to have even stronger attachment to the city, followed by people with a long duration-of-stay (albeit originally coming from elsewhere).

A growing group of young people come to the city for education or work. When they have children, not all of them leave for the suburbs, but some stay. This leads to a growing number of middle-class families in cities. This growth of middle-class families is often analysed in the context of gentrifying cities, as the settling down of ‘gentrifier families’ (Boterman, 2012; Boterman et al., 2010; Brun & Fagnani, 1994; Lilias, 2014). This research suggests that families live in the city because the proximity of work, daycare, shops and other daily amenities enables them to combine a family with a career. They express a strong attachment to the city and urban life and are willing to give up better housing quality, for example, live in a smaller house or stay renter, than they could have in the suburbs. There is quite some evidence that the cultural orientation of a household, expressed through the field of education or work, influences the social geography in metropolitan regions (Boterman et al., 2017). Households with a background in the social sciences or working in the creative sector seem to be more urban oriented. These specific fractions of the middle classes do not only command substantial cultural capital, they also often have a higher income, giving them relatively much choice on the housing market: they can choose to stay in the city or move to a more suburban location. But this higher income does not mean that they can afford everything; they still have to make trade-offs (Boterman & Bridge, 2015; Bridge, 2003; Brun & Fagnani, 1994).

The economy of postindustrial cities in the global North increasingly has an international component. This is not only the case for so called ‘Global Cities’ (Sassen, 1991) but also for smaller noncapital cities (Bonneville, 1994). High-skilled workers move to these cities, also across borders. Expats become more numerous. Expats are often associated with small households that only live for a short term in a foreign country (Beaverstock, 2005). But some of them come as or eventually settle down as a family (Bontje, Musterd, & Sleutjes, 2017). This new group of ‘expat families’ seem to have a lot in common with the ‘gentrifier families’, but their perspective on appropriate residential milieus may differ from Dutch families. Given the relatively small scale of the Amsterdam metropolitan region compared with their experiences from, for instance London, they may more easily move to the metropolitan region around Amsterdam. On the other hand, the strong presence of people from the same country as well as the associated amenities and shops may rather contribute to a central urban orientation (Beaverstock, 2005; Scott, 2006).

The composition of many Northern and Western European cities is influenced by their colonial history and their need for cheap labour in the 1960s and 1970s. During that period, many people from former colonies and guest workers came to Northern and Western Europe. These families, here labelled ‘ethnic minority families’, often have a long history in the city. Contrary to the ‘expat families’, the parents from the main immigration countries have been in the city for many years. They came for a large part in the 60s and 70s of the last century and therefore have a specific demography and geography. The first generation is mostly retired and generally past the family formation age. Demographically, the second generation is now in the family formation age. Originally, these groups were mainly concentrated in cities, but their geography is diversifying (Catney, 2016). Although many still belong to the relatively weaker socio-economic groups, upward mobility now provides opportunities to purchasing a home in the suburbs and become owner-occupier (Hamnett & Butler, 2013). It has been demonstrated that the second generation is better educated and has better prospects on the labour and housing market than the first generation (Lelie, Crul, & Schneider, 2012). This could result in a suburbanisation trend of ‘ethnic minority families’. But other factors like the preference for living near to others from the same ethnic group or living in a more diverse neighbourhood can hamper them to move to a more suburban location (Andersen, 2016; Clark, 2009).

The last important group of families are those who are originally from the city, but are not of minority descent. These ‘original city dweller families’ may have a strong attachment to the city, yet they
did not deliberately choose to live in the city. Historically, these ‘original city dwellers’ belonged largely to the working classes or lower middle classes. This group massively suburbanised in most of the 70s and 80s of the previous century. When they could afford it, they moved to a suburban setting to a single family dwelling. This was also motivated by the desire for a safe neighbourhood and good schools (Hinshaw & Allot, 1972). In the context of the gentrifying city, these groups, labelled as the ‘ordinary people’ (DeSena, 2006), are among those that face displacement. Given the diminishing size of the traditional white working classes, the question is does this group still constitute a substantial element of suburbanisation?

2.2 Case study

In the past five decades, the population of the larger cities in the Netherlands has changed significantly (PBL, 2015). Changes that can also be seen in other postindustrial cities in the Global North. The three largest cities, Amsterdam, Rotterdam, The Hague and to a lesser extent also the fourth city, Utrecht, all have gone through a suburbanisation period where many city dwellers left these cities to live in the municipalities in the region around these cities. This period, roughly between 1960 and 1985, has been followed by a slow recovery in population size, and this growth accelerated after 2000 (PBL, 2015). In this suburbanisation period, the region around these cities still grew demographically, yet slowing down when the central cities recovered. In some suburban areas, policy makers are now even worried about population decline (PBL, 2015).

In this period, the composition of the population of the cities changed as well (PBL, 2015). Many families that left the cities during the suburbanisation period had no migration background and were often born and raised in the city. At the same time, the cities received a growing migrant population of guest workers (mainly from Turkey and Morocco) and from former colonies (mainly from Suriname and the Dutch Antilles). Cities with universities, especially Amsterdam and Utrecht, saw a growing number of students. In more recent years, the internationalisation of the economy lead to a rising share of expats (Savini, Boterman, van Gent, & Majoor, 2016). The Hague has a strong international component due to the presence of the international court of justice and many (related) nongovernmental organisations (NGOs) (PBL, 2015). Rotterdam kept a more working class profile, although it is diversifying (Nientied, 2018). These changes in the inflow of young people in cities ultimately lead to a change in the young families that are formed. The extent to which these changes in the population are manifest in the four largest cities of the Netherlands differs between the cities. These differences between the cities give the possibility to compare the outcomes and get a better grip on the influence of the changing composition on the residential mobility of young families from the city to the municipalities in the region around the city.

The focus is on young families that lived in the city and stayed within the metropolitan region of that city. When they move to the suburbs around the city, they often stay functionally tied to the city. The moves young families make within a metropolitan region are often related to housing and neighbourhood quality. It is an expression of their residential preference and possibilities within a metropolitan region. Moves to locations further away are often more related to changes in jobs and/or working locations and are therefore left outside the scope of this article.

Moving behaviour is influenced by economic conditions, especially in economies where the housing market is highly related to the general economy. Periods of boom can lead to higher mobility rates, where periods of bust decrease mobility (Salvati & Carlucci, 2017), especially for owner-occupiers, making it more of concern for higher income households than lower income (Hochstenbach & Musterd, 2018). The economic crisis had a large impact on moving behaviour in the Netherlands. House prices dropped and owner-occupiers did not sell their house. The mobility rate dropped. To make a sound comparison through time, the focus is on two time periods, one before (2005–2006) and one after (2015–2016) the economic crisis. These are both periods of economic boom.

3 DATA AND METHODS

The Bureau for National Statistics provides register data on the individual level on all the inhabitants of the Netherlands (Bakker, van Rooijen, & van Toor, 2014). These data are available for research and give the possibility to get a detailed insight in the moving (and nonmoving) behaviour of young families in a metropolitan region. It comprises data like household composition, age, age of the children, ethnic background, income, education level and type of education, place of birth, current and former place of residence, duration of stay on the former and current address. It also gives information on the (current and former) dwelling: the tenure, size and value.

Two datasets are compiled: The first contains the households that lived in the four cities in the beginning of the observation period and stayed within the metropolitan region of that city in the period 2005–2006. These households could have stayed at the same address (no move), moved to another address within the city or moved from the city to the region around that city. The second dataset contains households with the same criteria, but for the period 2015–2016. The reference data are 31 December 2005 and 31 December 2016, respectively. Long distance moves to elsewhere in the Netherlands or abroad are left out of the analysis. Also, in-movers during the observation period are not included. The metropolitan regions are defined as the housing market regions (woningmarktregio’s). The Netherlands is divided in 19 housing market regions. These regions are defined based on the moving patterns between municipalities. Amsterdam and Utrecht both have their own housing market region. The Hague and Rotterdam together form one housing market region. For this analysis, the region The Hague-Rotterdam has been split up, based on the general moving patterns between The Hague, Rotterdam and their surrounding municipalities.

From these households, all young families are selected. Only this selection of young families is used in all the analyses in this
paper. Young families are defined by two cohabiting adults and the age of the oldest child. The age should be less than 5 years old (situation at the end of both periods 31 December 2006 and 31 December 2016). The household only contains these household members (two adults and one or more children below 5 years old). This is the household type that is most associated with suburbanisation. In the Netherlands, when children are 5 years old, they have to attend school. After this transition, mobility rates generally drop steeply. This is for many families the moment they do not want to move, because otherwise children have to switch schools. By measuring the household situation at the end of the period (after a possible move), also moves just before the first child is born are included as well as moves where two partners come from different addresses. The analysis focusses on the move of the reference person in the household (mainly the man). For all other variables, the characteristics of both partners have been included in the analysis. Only families with two partners are selected; therefore, one-parent households are not included in the analysis. Institutionalised households, multiple households sharing one address and households living at nonresidential addresses are excluded. This means that young families in more precarious (housing) situations (one-parent households, families coresiding with other households like grandparents or living in shelters) are not included in the analysis.

3.1 Descriptive of young families in the four big cities in the Netherlands in 2005–2006 and 2015–2016

To answer the first research question (What is the demographic, socio-economic and socio-cultural composition of young families in the four big cities in the Netherlands and how does it change through time?) the selected family households are divided into 13 subgroups, which are compared in terms of their moving behaviour. To make a sound comparison through time, the groups are made as homogeneous as possible in terms of their moving behaviour. The main elements that can influence moving behaviour are included: ethnic background, place of birth and income level. The characteristics of both partners are used to make the subgroups. Ideally educational attainment level should be included, because this is also an important driver in moving behaviour. As this variable has too many missing values (about 25%), including this variable would lead to the undesired exclusion of too many families.

The first division is made by ethnic background:

- one or both partners Dutch background;
- both partners Surinamese, Antillean, Turkish and Moroccan background (first and second generations together);
- both partners other migrant background or mixed from different migrant backgrounds (also both first and second generations).

The second division is by place of birth:

- both born in the city;
- one or both born in the municipalities in the region of that city;
- both born elsewhere in the Netherlands or mixed born elsewhere in the Netherlands with born in the city and with born abroad;
- both born abroad.

This division is only made when relevant and feasible not to end up with too small groups. The last division is by income level (middle and high income). The income level is based on the disposable household income, divided in quartiles based on the national distribution of income of all households. The high income group is formed by the fourth quartile, the middle income group by the second and third quartile. All young families with a low income (first quartile) form the last group. Low-income families have very little options on the housing market, and this will not differ that much within this group. Therefore, they are put in a separate group. Young families are quite an affluent group, mostly because many contain two working adults (74%). Approximately 50% fall in the fourth quartile. Only 5% has a low income (first quartile).

This results in the following 13 groups (see also Table 1):

1. One or both Dutch background—both born in the city—middle income;
2. One or both Dutch background—both born in the city—high income;
3. One or both Dutch background—one or both born in the municipalities in the region of the city—middle income;
4. One or both Dutch background—one or both born in the municipalities in the region of the city—high income;
5. One or both Dutch background—born elsewhere—middle income;
6. One or both Dutch background—born elsewhere—high income;
7. Both Surinamese, Antillean, Turkish and Moroccan background—middle income;
8. Both Surinamese, Antillean, Turkish and Moroccan background—high income;
9. Other or mixed migrant background—one or both born in the Netherlands—middle income;
10. Other or mixed migrant background—one or both born in the Netherlands—high income;
11. Other or mixed migrant background—both born abroad—middle income;
12. Other or mixed migrant background—both born abroad—high income;
13. Low income.

The first two groups represent the ‘original city dwellers families’. Especially those with a middle income (Group 1) are historically associated with suburbanisation. Groups 3 to 6 represent the ‘gentrifier families’. Groups 3 and 4 grew up in the urban region, which probably makes them more likely to return to the region around the city than Groups 1 and 2. Groups 5 and 6 grew up in the Netherlands outside of the urban regions and often came to the cities for education. Especially, Group 6 is mainly higher educated (over 70%). Groups 5 and
| Income: | 1. One or both Dutch, both born in the city | 2. One or both Dutch, both born in the High | 3. One or both Dutch, one or both born in the region | 4. One or both Dutch, one or both born in the High | 5. One or both Dutch, born elsewhere | 6. One or both Dutch, born elsewhere High | 7. Both Turkish, Moroccan, Surinamese, Antillean Middle | 8. Both Turkish, Moroccan, Surinamese, Antillean High | 9. Other non-Dutch, one or both born in NL | 10. Other non-Dutch, one or both born in NL High | 11. Other non-Dutch, both born abroad | 12. Other non-Dutch, both born abroad High | 13. Low income Total |
|---------|------------------------------------------|----------------------------------------|------------------------------------------|------------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| Total (abs.) | 6,125 | 4,193 | 4,899 | 9,488 | 13,203 | 32,803 | 15,608 | 4,774 | 2,790 | 2,711 | 8,789 | 3,726 | 5,653 | 114,762 |
| Moved to the region (%) | 8 | 10 | 15 | 17 | 12 | 4 | 5 | 7 | 10 | 7 | 7 | 7 | 5 | 10 |
| Two-earner hold (%) | 78 | 94 | 79 | 95 | 74 | 94 | 43 | 85 | 62 | 90 | 40 | 76 | 21 | 74 |
| Education level of ref. person: low (%) | 20 | 7 | 11 | 2 | 10 | 1 | 36 | 19 | 18 | 5 | 24 | 6 | 34 | 13 |
| Middle (%) | 34 | 26 | 33 | 18 | 29 | 14 | 30 | 30 | 37 | 22 | 19 | 8 | 24 | 23 |
| High (%) | 11 | 37 | 30 | 65 | 39 | 73 | 9 | 29 | 22 | 54 | 12 | 23 | 13 | 41 |
| Unknown (%) | 36 | 30 | 26 | 15 | 22 | 12 | 24 | 22 | 22 | 18 | 45 | 63 | 29 | 23 |
| Education level of partner: low (%) | 19 | 5 | 11 | 2 | 10 | 1 | 33 | 16 | 16 | 4 | 27 | 6 | 31 | 13 |
| Middle (%) | 38 | 26 | 33 | 14 | 26 | 10 | 36 | 32 | 34 | 19 | 17 | 8 | 26 | 22 |
| High (%) | 16 | 46 | 37 | 72 | 47 | 79 | 11 | 35 | 29 | 59 | 14 | 27 | 15 | 46 |
| Unknown (%) | 27 | 23 | 19 | 12 | 17 | 10 | 20 | 17 | 21 | 18 | 42 | 59 | 28 | 20 |
| Ref. person educated in social sciences: yes (%) | 3 | 5 | 8 | 11 | 13 | 12 | 2 | 2 | 7 | 8 | 3 | 3 | 5 | 8 | (Continues) |
TABLE 1  (Continued)

| Income: | 1. One or both Dutch, both born in the city | 2. One or both Dutch, both born in the city | 3. One or both Dutch, one or both born in the region | 4. One or both Dutch, one or both born in the region | 5. One or both Dutch, born elsewhere | 6. One or both Dutch, born elsewhere | 7. Both Turkish, Moroccan, Surinamese, Antillean | 8. Both Turkish, Moroccan, Surinamese, Antillean | 9. Other non-Dutch, one or both born in NL | 10. Other non-Dutch, one or both born in NL | 11. Other non-Dutch, both born abroad | 12. Other non-Dutch, both born abroad | 13. Low income | Total |
|---------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| Partner educated in the social sciences: yes (%) | 5 | 12 | 15 | 23 | 20 | 26 | 3 | 5 | 11 | 16 | 5 | 6 | 6 | 15 |
| Ref. person or partner is student: yes (%) | 3 | 3 | 6 | 4 | 8 | 4 | 6 | 9 | 8 | 5 | 3 | 3 | 6 | 5 |
| Duration-of-stay ref. person: <3 y (%) | 35 | 30 | 37 | 32 | 37 | 34 | 41 | 35 | 43 | 36 | 49 | 54 | 46 | 38 |
| 3–5 y (%) | 36 | 37 | 36 | 37 | 36 | 39 | 34 | 38 | 33 | 36 | 29 | 31 | 30 | 36 |
| 6–10 years (%) | 22 | 26 | 21 | 26 | 21 | 23 | 19 | 21 | 17 | 23 | 18 | 13 | 18 | 21 |
| >10 y (%) | 6 | 6 | 5 | 5 | 6 | 4 | 5 | 6 | 7 | 5 | 5 | 2 | 7 | 5 |
| Age ref. person (mean) | 33.9 | 36.2 | 35.0 | 36.8 | 36.5 | 37.4 | 34.0 | 33.7 | 34.5 | 36.3 | 36.9 | 37.3 | 36.0 | 36.1 |
| Age partner (mean) | 30.9 | 33.6 | 32.2 | 34.6 | 33.4 | 35.1 | 28.9 | 30.4 | 31.2 | 34.0 | 31.5 | 34.4 | 30.3 | 32.8 |
| Number of children (mean) | 1.32 | 1.39 | 1.35 | 1.46 | 1.36 | 1.48 | 1.47 | 1.43 | 1.36 | 1.41 | 1.39 | 1.35 | 1.35 | 1.42 |
6 are expected to be less likely to move to the region around the city than Groups 3 and 4.

Groups 7 and 8 are the ‘ethnic minority families’, young families of Surinamese, Antillean, Turkish and Moroccan descent. Because of a strong urban orientation and concentration, these families are expected to be least likely to suburbanise. Especially, Group 7 has a different socio-economic and socio-cultural profile than other young families. A very small group attended higher education (10%), and only 43% are dual earner households.

Groups 9 and 10, who are born in the Netherlands, have very diverse migration backgrounds. Groups 11 and 12, who are born abroad, have a more distinct profile: Many of those families with a middle income (11) contain mainly families from the Global South, also including refugee groups and families from Eastern European countries. Also, within this group, the share of dual earner households is low (40%). The young families in which the partners were born abroad with a high income (12) contain most of what we refer to as the ‘expat families’, families largely originating from Anglo-Saxon countries and Western Europe.

The final category of low-income families (13) only has this characteristic. Not only because this is a small category for which the subgroups are difficult to split off but also because we expect this category to be generally very constrained in their residential options, making other factors less relevant. The majority of this group of low-income families have a migrant background and are born abroad.

First the size of the 13 groups are compared between 2005–2006 and 2015–2016. This gives answer to the first research question.

3.2 Oaxaca–Blinder decomposition technique to measure the compositional change in migration from the city to the municipalities in the region

For the second research question (To what extent can the change in outmigration of young families to the surrounding region be explained by changes in the composition of these young families in the four big cities in the Netherlands?) the Oaxaca–Blinder decomposition technique is used (Blinder, 1973; Oaxaca, 1973). This technique helps to determine which part of the change in moving behaviour in the period 2005–2006 and 2015–2016 is due to changes in the composition (composition-effect) and which part is due to changes in moving behaviour (rate effect).

The 13 subgroups differ in their outmigration rate; some have a high probability for moving from the city to the region around the city, whereas others have a low probability. The amount of young families that move from the city to the region can change, whereas the rates per subgroup stay the same. For example, if a certain subgroup with a high probability for moving to the municipalities in the region has doubled in size, the overall probability, for all subgroups together, for moving to the municipalities in the region increases. The increase in outmigration is in this example only caused by a demographic increase (composition), and not by a change in residential preference (rate).

The Oaxaca–Blinder regression decomposition technique allows for distinguishing between both types of effects and quantifies the impact of both elements (Blinder, 1973; Oaxaca, 1973). Shuttleworth, Cooke, and Champion (2018) and Cooke (2011) used the technique recently for a similar issue. In this article, we follow their operationalisation:

\[
Y_{2005-2006} = X_{2005-2006} \beta_{2005-2006} + \epsilon_{2005-2006}
\]

and

\[
Y_{2015-2016} = X_{2015-2016} \beta_{2015-2016} + \epsilon_{2015-2016}
\]

In which \( Y \) is the individual probability of a young family moving from the city to the municipalities in the region, written as a function of a vector of individual characteristics.

The difference between 2015–2016 and 2005–2006 in the aggregate moving probability can be written as:

\[
Y_{2015-2016} - Y_{2005-2006} = X_{2015-2016} \beta_{2015-2016} - X_{2005-2006} \beta_{2005-2006}
\]

By adding and subtracting the following terms, the decomposition can be constructed:

\[
X_{2015-2016} \beta_{2015-2016} - X_{2005-2006} \beta_{2005-2006}
\]

Consequently:

\[
Y_{2015-2016} - Y_{2005-2006} = X_{2015-2016} \beta_{2015-2016} - X_{2005-2006} \beta_{2005-2006}
\]

\[
+ X_{2015-2016} \beta_{2005-2006} - X_{2015-2016} \beta_{2005-2006}
\]

\[
+ X_{2005-2006} \beta_{2015-2016} - X_{2005-2006} \beta_{2015-2016}
\]

And then rearrange:

\[
Y_{2015-2016} - Y_{2005-2006} = X_{2015-2016} \beta_{2005-2006} - X_{2005-2006} \beta_{2005-2006}
\]

\[
+ X_{2015-2016} \beta_{2005-2006} - X_{2005-2006} \beta_{2005-2006}
\]

\[
+ X_{2015-2016} \beta_{2005-2006} - X_{2015-2016} \beta_{2005-2006}
\]

\[
+ X_{2005-2006} \beta_{2015-2016} - X_{2005-2006} \beta_{2015-2016}
\]

which finally yields:

\[
Y_{2015-2016} - Y_{2005-2006} = (X_{2015-2016} \times \beta_{2005-2006}) \times (X_{2015-2016} \times \beta_{2005-2006})
\]

\[
+ (\beta_{2015-2016} - \beta_{2005-2006}) \times X_{2005-2006} \times \epsilon_{2005-2006}
\]

\[
+ (\beta_{2015-2016} - \beta_{2005-2006}) \times (X_{2015-2016} - X_{2005-2006}) \times \epsilon_{2005-2006}
\]

The first term on the right hand side is an estimate of the effect of changing population composition on the overall change in residential mobility based upon year 2005–2006 parameter estimates (composition effects). It estimates the change in outmigration, based only on the change in composition. The second term on the right hand sight is an estimate of the effect of changing parameter estimates on the overall
change in outmigration based upon year 2005–2006 population (rate effects). The third term is a residual effect. This residual effect is an interaction term accounting for the fact that differences in composition and rate effects exist simultaneously (Jann, 2008). The Oaxaca–Blinder decomposition technique defines the size of both the compositional and the rate effect, but does not explain what caused it.

### 3.3 Multinomial and binary logistic regression technique to measure the rate effect in the change in migration from the city to the municipalities in the region

To answer the third research question (What are the odds that a young family with specific demographic, socio-economic and socio-cultural characteristics moves from the four big cities in the Netherlands to the municipalities in the region and how has it changed through time?), logistic regression techniques are used to unravel the changing rate effect more closely. First, a multinomial regression technique is used to determine what the odds are for young families to move within the city or from the city to the municipalities in the region, in comparison with not moving. Second, a logistic regression technique is used for only the families who moved. For all these young families, the current and former housing conditions are examined. The housing conditions are defined by tenure, size and value. The tenure is categorised in owner-occupier or other (rent or unknown), the size in three groups (below 60, 60–100 and 100 m² and more) and the value in euro’s. These values are defined every year by the tax authorities for all dwellings (both owner-occupied and rental). It does not represent housing costs (what households pay for it in mortgage or rent), but it indicates the purchasing value at that moment. In the analysis, the situation before and after the move is measured in a combined variable.

Other control variables are duration-of-stay prior to the research period, whether the head of the household is a student, the educational level and type of education, the age of the head of the household and the number of children in the household. Table 1 gives the bivariate analysis of the 13 subgroups of young families by the control variables used in the regression analysis.

### 4 RESULTS

The total observed population of young families contains 114,762 households. Ten percent of these young families moved to the region around the city in the two observed time periods (2005–2006 and 2015–2016). These outmigration rates differ between the 13 subgroups (see Table 1). In Groups 3 and 4, the ‘gentrifier families’ that originate from the region, indeed, have the highest outmigration rate (15% and 17%, respectively). They are followed by Groups 5 and 6, the ‘gentrifier families’ that originate from outside the region around the cities (10% and 12%, respectively). The outmigration rate of ‘ethnic minority families’ is very low (Group 7: 4%; Group 8: 5%). Also, ‘low-income families’ have a low outmigration rate (5%).

In all the four cities, the population of young families has grown between 2006 and 2016. Families have become more numerous in cities. The increase of families outpaced the total growth of number of households (CBS, 2019). This could indicate that the preference for families has become more urban. But at the same time, the group of young families that moved from the city to the region of that city has also grown. In particular, in Amsterdam and Utrecht, the outmigration increased (+395 young families in Amsterdam and +303 in Utrecht, see Table 2).

The composition of the young families in these four cities differ from each other (Figure 1). In Amsterdam and Utrecht, higher-income families constitute the largest group. Most of them are of Dutch background and especially those that were born elsewhere in the Netherlands (Group 6) form a large group. This is also the group that has increased strongest in the 10-year time period. Both cities have large universities that attract many students from all over the country (and from abroad). It seems that indeed, a substantial share of the middle classes stay and form a family in the city, often referred to as ‘gentrifier families’. Additionally, the economy of Amsterdam is also characterised by strong internationalisation, reflected by the increase of ‘expat families’ (Group 12).

The young families in Rotterdam and The Hague more often have a migrant background, predominantly with a middle income. The group of young families of Surinamese, Antillean, Turkish and Moroccan descent is quite stable in size; those of other migrant background has grown between 2006 and 2016. The growth was concentrated in the group that was born abroad and has a middle income (Group 11).

Although The Hague hosts a score of internationally oriented institutions and NGO’s, the share of young families from abroad with a high income is relatively small (Group 12).

In all four cities, the group of Dutch families born in the city decreases (Groups 1 and 2). This is still a consequence of the suburbanisation process. Not many children of Dutch origin were born in the cities in the 80s, and 30 years later, this results in smaller amounts of young families of this particular group. The rise of the young families in the city with roots in the region around the cities is the flip side of this same process (Groups 3 and 4).

#### 4.1 Increased outmigration largely due to changes in the composition of young families

In Amsterdam and Utrecht, the outmigration of young families in absolute numbers was in 2015–2016 much stronger than in 2005–2006. Using the Oaxaca–Blinder decomposition technique, it can be determined to what amount this increased outmigration may be related to changes in the composition or changes in moving behaviour (rate effects) (Figure 2). Note that this technique only gives insight in the size of both the compositional and the rate effect, but does not explain what caused it. Remarkably, in both cities, the same group reveals the strongest change: the ‘gentrifier families’ (Group 6). In Amsterdam, this is mostly a compositional effect: The size of this group has increased, and consequently, the outmigration of this group...
TABLE 2  Young families in the city and movers from the city to the region, 2005–2006 and 2015–2016

|          | 2005–2006 |       | 2015–2016 |       |
|----------|-----------|-------|-----------|-------|
|          | Stayed within the city | Moved to the region | Total | Stayed within the city | Moved to the region | Total |
| Amsterdam | 16,977 | 2,347 (12.1%) | 19,324 | 18,978 | 2,742 (12.6%) | 21,720 |
| Utrecht  | 8,865 | 745 (7.8%) | 9,610 | 9,854 | 1,048 (9.6%) | 10,902 |
| The Hague | 11,986 | 846 (6.6%) | 12,832 | 12,056 | 1,006 (7.7%) | 13,062 |
| Rotterdam | 11,794 | 977 (7.7%) | 12,771 | 13,318 | 1,223 (8.4%) | 14,541 |

FIGURE 1  Young families by type, 2006 and 2016

has grown. However, in Utrecht, there is also a considerable rate effect, a higher share of ‘gentrifier families’ moved from Utrecht to the region of Utrecht in 2015–2016 than in 2005–2006.

In Amsterdam, the increasing numbers of suburbanizing families also originate from the growing group of ‘expat families’ (Group 12). Again, this seems largely a result of composition, not of a change in moving behaviour.

In The Hague and Rotterdam the growth in outmigration of young families was smaller, and also not strongly related to any specific subgroup. In The Hague, the increased outmigration for the young families of Dutch descent was largely a rate effect. The outmigration of young families born abroad was a compositional effect. In Rotterdam, the moving behaviour of young families was quite stable, both the rate and compositional effects are small.

In total, the amount of young families moving from the cities to their respective surrounding regions increased by +1,108. All the compositional effects added together (per group and per city, all the black bars in Figure 2) reveal that +706 of this increase can be ascribed to the changing composition. The rate effects added together leads to +294 (grey bars in Figure 2 added together); these can be ascribed to a change in the rate effects. The remaining residuals add up to +108 (black rimmed bars). This means that 706 of the total increase of 1,108 (64%) can be explained by the growth of the amount of families living in the city. The group of young families in the cities has grown and therefore the outflow to the region around the cities has grown. On top of that, the growth was mainly found in the ‘gentrifier families’ with a high income (Group 6), a group with a relatively high outmigration rate (12%). The majority of the increase of families moving to the region is therefore caused by a change in the composition of young families in cities.

4.2  Moving behaviour of young families differ by residential biography (place of birth, migration background) and income

The Oaxaca–Blinder technique reveals which part of the absolute changes in numbers is compositional and which part is a rate effect,
but it cannot explain what caused the rate effect. Using a multinomial logistic regression technique, the actual changes in moving behaviour can be determined more closely (Table 3).

This analysis is split in two: The first set of models looks at the moving behaviour compared with not moving; The second set of models focuses on the movers alone.

The first model only looks at the different household types, the year and the four cities. In the period 2015–2016, young families had higher odds for moving to the municipalities in the region than in 2005–2006, and lower odds for moving within the four cities compared with not moving. In Utrecht, the odds for moving to the municipalities in the region are slightly lower than the reference category (Rotterdam). This means that the somewhat higher outmigration rate (compared with the reference category Rotterdam) can be explained by the differences in composition. In Amsterdam, the odds for moving to the municipalities in the region are still higher than in the other cities. The change between the years cannot only be explained by the difference in composition (captured in the 13 subgroups), as was already expected from the outcomes of the Oaxaca–Blinder method.

The odds for moving to the municipalities in the region (compared with the odds for staying within the city) are quite different for the different family types. This affirms that the characteristics in which the young families are grouped are relevant categories with distinctive moving behaviour. Most of the young families types have higher odds for moving to the region than the reference category (Group 13, low-income families). This is in line with what was expected based on the few possibilities low-income families have on the housing market. But the low-income families do have higher odds for moving within the city.

Those young families that originate in the region around the city have the highest odds for moving from the city back to that region (Groups 3 and 4). This is almost regardless of income level. This result is in line with previous research on residential biographies that people in the family formation phase often return to where they grew up (Blaauboer, 2011; Feijten et al., 2008).

The young families that are historically often associated with suburbanisation, the ‘original city dwellers’ (Groups 1 and 2, one or both Dutch background, both born in the city), are indeed a group that shows relatively high odds for moving to the region around the city. Although waning in numbers, in their moving behaviour, they are still a relevant group in the suburbanisation process. The ‘gentrifier families’ (Group 6, one or both Dutch background, born elsewhere outside the region, high income) have slightly higher odds for moving to the region than the ‘original city dwellers’ (Groups 1 and 2). Although ‘gentrifier families’ are often named as a group with a strong attachment to the city, in their search for a new home, they often leave. Although the ‘expat families’ (Group 12) have socio-economic and socio-cultural similarities with the ‘gentrifier families’, their moving behaviour is different: They often move within the city and show lower odds for moving to the municipalities in the region compared with the odds for the ‘gentrifier families’. Young ‘ethnic minority families’ from Surinamese, Antillean, Turkish and Moroccan descent with a middle income (Group 7) have the lowest odds for moving to the region. This is even lower than the reference category (Group 13, low-income families). But also when their income is higher, the odds for this group for moving to the region are relatively low.

Model 2 in Table 3 adds other demographic, socio-economic and socio-cultural characteristics. Two-earner families have higher odds
|                      | Model 1 | Model 2 |                      |                      |
|----------------------|---------|---------|----------------------|----------------------|
|                      | Moved within the city | Moved within the city | Moved from the city to the region | Moved from the city to the region |
|                      | Odds ratio (lower–upper bound 95% confidence interval) | Sig. | Odds ratio (lower–upper bound 95% confidence interval) | Sig. | Odds ratio (lower–upper bound 95% confidence interval) | Sig. | Odds ratio (lower–upper bound 95% confidence interval) | Sig. |
| Year: 2016 (ref. = 2006) | 0.942 (0.914–0.971) | *** | 1.064 (1.021–1.108) | *** | 0.954 (0.951–0.957) | *** | 0.953 (0.948–0.958) | *** |
| Amsterdam (ref. = Rotterdam) | 1.134 (1.090–1.180) | *** | 1.549 (1.467–1.635) | *** | 1.213 (1.164–1.263) | *** | 1.724 (1.631–1.823) | *** |
| Utrecht              | 0.970 (0.925–1.018) |  | 0.922 (0.862–0.987) | **  | 0.995 (0.947–1.045) |  | 0.957 (0.894–1.025) |  |
| The Hague            | 1.104 (1.057–1.152) | *** | 0.893 (0.837–0.954) | *** | 1.141 (1.092–1.192) | *** | 0.934 (0.875–0.998) | ** |
| 1. One or both Dutch background, both born in the city, middle income (ref. = low income) | 0.723 (0.660–0.792) | *** | 1.702 (1.464–1.979) | *** | 0.701 (0.637–0.772) | *** | 1.422 (1.217–1.662) | *** |
| 2. One or both Dutch background, both born in the city, high income | 0.759 (0.685–0.840) | *** | 2.015 (1.722–2.358) | *** | 0.857 (0.768–0.955) | *** | 1.870 (1.584–2.208) | *** |
| 3. One or both Dutch background, one or both born in the region, middle income | 0.634 (0.572–0.702) | *** | 3.083 (2.671–3.558) | *** | 0.653 (0.587–0.726) | *** | 2.801 (2.412–3.253) | *** |
| 4. One or both Dutch background, one or both born in the region, high income | 0.807 (0.743–0.876) | *** | 3.426 (3.004–3.906) | *** | 0.943 (0.859–1.035) |  | 3.375 (2.921–3.898) | *** |
| 5. One or both Dutch background, born elsewhere, middle income | 0.783 (0.726–0.846) | *** | 1.937 (1.697–2.212) | *** | 0.873 (0.804–0.949) | *** | 1.964 (1.708–2.257) | *** |
| 6. One or both Dutch background, born elsewhere, high income | 0.848 (0.792–0.909) | *** | 2.370 (2.093–2.683) | *** | 1.029 (0.948–1.116) |  | 2.456 (2.138–2.821) | *** |
| 7. Both Turkish, Moroccan, Surinamese, Antillean background, middle income | 0.857 (0.797–0.922) | *** | 0.659 (0.569–0.763) | *** | 0.809 (0.750–0.872) | *** | 0.560 (0.483–0.650) | *** |
| 8. Both Turkish, Moroccan, Surinamese, Antillean background, high income | 0.805 (0.732–0.886) | *** | 1.025 (0.862–1.218) |  | 0.767 (0.694–0.848) | *** | 0.801 (0.670–0.958) | ** |
| 9. Other or mixed migrant background, one or both born in the Netherlands, middle income | 0.905 (0.810–1.011) | * | 1.382 (1.145–1.667) | *** | 0.890 (0.793–0.997) | ** | 1.225 (1.012–1.482) | ** |
| 10. Other or mixed migrant background, one or both born in the Netherlands, high income | 0.857 (0.764–0.961) | *** | 1.822 (1.528–2.172) | *** | 0.966 (0.855–1.090) |  | 1.736 (1.444–2.087) | *** |

(Continues)
### TABLE 3 (Continued)

|                           | Moved within the city | Moved from the city to the region | Moved within the city | Moved from the city to the region |
|---------------------------|-----------------------|-----------------------------------|-----------------------|-----------------------------------|
| **Model 1**               |                       |                                   | **Model 2**           |                                   |
|                           | Odds ratio (lower–upper bound 95% confidence interval) | Sig. | Odds ratio (lower–upper bound 95% confidence interval) | Sig. |
| 11. Other or mixed migrant background, both born abroad, middle income | 1.040 (0.960–1.126) | *** | 1.462 (1.266–1.689) | *** |
|                           | **Odds ratio (lower–upper bound 95% confidence interval)** | Sig. | **Odds ratio (lower–upper bound 95% confidence interval)** | Sig. |
| 12. Other or mixed migrant background, both born abroad, high income | 1.418 (1.290–1.560) | *** | 1.470 (1.235–1.749) | *** |
| Two-earner household (ref. one-earner or no income from work) | 0.993 (0.953–1.034) |  | 1.099 (1.033–1.168) | *** |
| Education-level reference person: middle (ref. low) | 0.947 (0.898–0.999) | ** | 1.163 (1.067–1.267) | *** |
| Education-level reference person: high | 1.031 (0.974–1.092) |  | 1.241 (1.136–1.356) | *** |
| Education-level reference person: unknown | 1.117 (1.059–1.178) | *** | 1.243 (1.139–1.357) | *** |
| Education-level partner: middle (ref. low) | 0.953 (0.902–1.007) | * | 1.296 (1.185–1.417) | *** |
| Education-level partner: high | 1.100 (1.036–1.168) | *** | 1.307 (1.190–1.435) | *** |
| Education-level partner: unknown | 1.089 (1.030–1.152) | *** | 1.232 (1.123–1.352) | *** |
| Type of education reference person: social sciences (ref. = other type or unknown) | 1.063 (1.004–1.127) | ** | 0.755 (0.697–0.817) | *** |
| Type of education partner: social sciences (ref. = other type or unknown) | 1.085 (1.035–1.137) | *** | 0.851 (0.801–0.904) | *** |
| Reference person or partner is a student (ref. no student) | 0.987 (0.921–1.058) |  | 0.944 (0.857–1.040) |  |
| Duration-of-stay reference person: less than 3 y (ref. = more than 10 y) | 0.958 (0.887–1.036) |  | 0.664 (0.600–0.734) | *** |
| Duration-of-stay reference person: 3–5 y | 0.728 (0.673–0.787) | *** | 0.659 (0.596–0.729) | *** |
| Duration-of-stay reference person: 6–10 y | 0.985 (0.910–1.067) |  | 0.973 (0.879–1.076) |  |

(Continues)
for moving to the region than one- or no-earner families. The highly educated have higher odds for moving, especially from the city to the region around the city. Young families that are educated in the social sciences less often move from the city to region than young families with education in other disciplines. This finding is in line with results from other studies that showed that people with more cultural capital are more urban oriented (Boterman et al., 2017).

The older young families are the lower the odds that they will move (both within the city as to the region). The larger the family (number of children), the higher the odds for moving to the region and the lower the odds for moving within the city. Young families with a short duration-of-stay on the current address have lower odds for moving (both within the city as to the region).

The model fits in this analysis of movers versus nonmovers is modest (Nagelkerke $R^2$ of 0.071 in the second model). The models give insight in the moving behaviour of young families with different socio-economic and socio-cultural characteristics, but only characteristics of the household are not sufficient to describe the moving behaviour. Especially, the characteristics of the housing market could be an important factor in explaining the moving behaviour of young families. These are added in the following analysis.

4.3 Differences in the local housing market lead to different rates in outmigration

The second set of models starts with the same analysis, but in a binary logistic regression (Table 4). The first model is the same as Model 2 in Table 3 but compares movers to the municipalities in the region with movers within the city. The results are similar to what could be expected based on the outcomes in the multinomial regression.

In Model 2, the characteristics of the dwelling are added, thereby accounting for the influence of the housing market. The characteristics of the current and former dwelling are added as a combined variable. Moving to the region around the city is often related to moving to a larger, more expensive (owner-occupied) home. This is in line with what was expected based on the literature, but what is remarkable is that the odds for young families in Amsterdam increase quite sharply in Model 2 (Table 4). This indicates that the local situation on the housing market has a different outcome for young families in Amsterdam than for young families in the other cities. The third model therefore looks at interaction effects between the city and the housing characteristics. The average house size in Amsterdam is much smaller than in the other three cities, and this results in a high outflow of young families in Amsterdam as evidenced by the effect of moving to a larger home. In the other three cities, this is less the case. In The Hague and Rotterdam, moving from the city to region of that city is often related to moving to a more expensive home. But in Amsterdam, and to a lesser extent Utrecht, this seems not to be the case. When young families in Amsterdam move to the region, they more often move to a less expensive home. This seems to reflect the high house prices of Amsterdam, which are on average higher than in the municipalities in the region around Amsterdam.

Also, the year variable is lower in Model 3 (Table 4). This suggests that the increased outmigation of young families in 2015–2016 is partly related to changes in the housing market.

The odds for a few household types change when the housing characteristics are added in the analysis. The ‘ethnic minority families’ with a high income (Group 8) now have similar odds as the ‘ethnic minority families’ with a middle income (Group 7). Also, the odds for moving to the region for the ‘expat families’ (Group 12) are in the last model very low. This suggests that their slightly higher outmigation to the region around the city is related to housing characteristics.
| Model 1 | Model 2 | Model 3 |
|---------|---------|---------|
| Year: 2016 (ref. = 2006) | 1.108 (1.054–1.164) | 1.108 (1.063–1.180) | 1.082 (1.025–1.142) |
| Amsterdam (ref. = Rotterdam) | 1.381 (1.294–1.474) | 1.909 (1.776–2.052) | 0.412 (0.257–0.660) |
| Utrecht | 0.975 (0.901–1.056) | 0.984 (0.907–1.068) | 2.367 (1.126–4.976) |
| The Hague | 0.819 (0.760–0.884) | 0.847 (0.783–0.916) | 0.786 (0.446–1.384) |

1. One or both Dutch background, both born in the city, middle income (ref. = low income) | 1.957 (1.649–2.324) | 1.531 (1.277–1.834) | 1.564 (1.303–1.877) |

2. One or both Dutch background, both born in the city, high income | 2.130 (1.770–2.564) | 1.338 (1.101–1.625) | 1.427 (1.171–1.739) |

3. One or both Dutch background, one or both born in the region, middle income | 4.206 (3.545–4.990) | 3.236 (2.702–3.875) | 3.443 (2.869–4.131) |

4. One or both Dutch background, one or both born in the region, high income | 3.478 (2.962–4.084) | 2.180 (1.841–2.582) | 2.250 (1.895–2.672) |

5. One or both Dutch background, born elsewhere, middle income | 2.202 (1.891–2.564) | 1.826 (1.555–2.143) | 1.916 (1.630–2.253) |

6. One or both Dutch background, born elsewhere, high income | 2.307 (1.982–2.684) | 1.440 (1.228–1.689) | 1.453 (1.236–1.708) |

7. Both Turkish, Moroccan, Surinamese, Antillean background, middle income | 0.690 (0.589–0.809) | 0.685 (0.580–0.809) | 0.704 (0.596–0.833) |

8. Both Turkish, Moroccan, Surinamese, Antillean background, high income | 1.009 (0.831–1.225) | 0.697 (0.569–0.854) | 0.716 (0.582–0.879) |

9. Other or mixed migrant background, one or both born in the Netherlands, middle income | 1.360 (1.104–1.675) | 1.223 (0.982–1.522) | 1.273 (1.020–1.589) |

10. Other or mixed migrant background, one or both born in the Netherlands, high income | 1.108 (1.033–1.188) | 1.108 (0.893–1.375) | 1.104 (0.886–1.376) |

11. Other or mixed migrant background, both born abroad, middle income | 1.108 (1.033–1.188) | 0.970 (0.901–1.043) | 0.999 (0.928–1.076) |

12. Other or mixed migrant background, both born abroad, high income | 0.939 (0.773–1.140) | 0.604 (0.493–0.740) | 0.578 (0.470–0.711) |

Two-earner household (ref. one-earner or no income from work) | 1.108 (1.033–1.188) | 0.970 (0.901–1.043) | 0.999 (0.928–1.076) |

Education-level reference person: middle (ref. low) | 1.210 (1.098–1.333) | 1.042 (0.941–1.154) | 1.085 (0.979–1.202) |

Education-level reference person: high | 1.196 (1.082–1.323) | 0.929 (0.836–1.033) | 0.977 (0.878–1.088) |

Education-level reference person: unknown | 1.140 (1.033–1.257) | 0.921 (0.830–1.022) | 0.956 (0.861–1.062) |

Education-level partner: middle (ref. low) | 1.366 (1.236–1.510) | 1.188 (1.070–1.320) | 1.227 (1.103–1.364) |

Education-level partner: high | 1.166 (1.050–1.296) | 0.925 (0.828–1.033) | 0.953 (0.851–1.066) |

Education-level partner: unknown | 1.154 (1.039–1.282) | 0.953 (0.853–1.064) | 0.991 (0.887–1.108) |

Type of education reference person: social sciences (ref. = other type or unknown) | 0.700 (0.638–0.767) | 0.778 (0.707–0.856) | 0.764 (0.692–0.844) |

(Continues)
| Type of education partner: social sciences (ref. = other type or unknown) | Model 1 | Model 2 | Model 3 |
|--------------------|---------|---------|---------|
|                     | Odds ratio (lower-upper bound 95% confidence interval) | Sig. | Odds ratio (lower-upper bound 95% confidence interval) | Sig. | Odds ratio (lower-upper bound 95% confidence interval) | Sig. |
| Reference person or partner is a student (ref. no student) | 0.988 (0.883–1.105) | 1.045 (0.929–1.176) | 1.047 (0.929–1.181) |
| Duration-of-stay reference person: less than 3 y (ref. = more than 10 y) | 0.763 (0.677–0.859) | *** | 0.806 (0.711–0.914) | *** | 0.803 (0.705–0.914) | *** |
| Duration-of-stay reference person: 3–5 y | 0.962 (0.854–1.084) | 0.897 (0.791–1.017) | * | 0.887 (0.779–1.009) | * |
| Duration-of-stay reference person: 6–10 y | 1.007 (0.893–1.136) | 0.919 (0.810–1.043) | 0.920 (0.808–1.048) |
| Age reference person (linear) | 1.000 (0.994–1.005) | 0.995 (0.989–1.001) | 0.995 (0.989–1.001) |
| Age partner (linear) | 0.999 (0.992–1.005) | 0.986 (0.979–0.993) | * | 0.986 (0.978–0.993) | * |
| Number of children (linear) | 1.229 (1.177–1.283) | *** | 1.115 (1.065–1.167) | *** | 1.104 (1.054–1.157) | *** |
| Owner–occupier → owner–occupier (ref. = rent → rent) | 1.744 (1.614–1.884) | *** | 1.711 (1.458–2.008) | *** |
| Owner–occupier → rent | 1.117 (1.018–1.227) | ** | 1.473 (1.216–1.784) | *** |
| Rent → owner–occupier | 1.706 (1.591–1.830) | *** | 1.532 (1.319–1.780) | *** |
| <60 m² → 60–100 m² (ref. = all sizes → 60 m²) | 2.885 (2.370–3.513) | *** | 0.899 (0.604–1.338) | *** |
| <60 m² → >100 m² | 10.188 (8.375–12.392) | *** | 1.350 (0.891–2.046) | *** |
| 60–100 m² → 60–100 m² | 3.527 (2.911–4.273) | *** | 1.004 (0.698–1.443) | *** |
| 60–100 m² → >100 m² | 9.732 (8.059–11.753) | *** | 1.508 (1.053–2.159) | ** |
| >100 m² → 60–100 m² | 3.327 (2.650–4.177) | *** | 1.159 (0.752–1.786) | *** |
| >100 m² → >100 m² | 8.026 (6.607–9.751) | *** | 1.300 (0.899–1.878) | *** |
| Value lower after move (<–€10,000) (ref. = value equal (<–€10,000–€10,000)) | 0.860 (0.785–0.942) | *** | 1.556 (1.243–1.949) | *** |
| Value higher after move –€10,000–€50,000 | 1.146 (1.045–1.257) | *** | 1.881 (1.514–2.338) | *** |
| Value higher after move –€50,000–€100,000 | 1.230 (1.126–1.344) | *** | 3.035 (2.468–3.733) | *** |
| Value higher after move –€100,000 | 1.297 (1.193–1.410) | *** | 4.132 (3.354–5.090) | *** |
| Owner–occupier → owner–occupier Amsterdam (ref. = rent → rent * Rotterdam) | 1.609 (1.317–1.966) | *** |
| Owner–occupier → owner–occupier Utrecht | 0.842 (0.663–1.070) | *** |
| Owner–occupier → owner–occupier The Hague | 0.487 (0.388–0.611) | *** |
| Owner–occupier → rent * Amsterdam | 0.662 (0.519–0.843) | *** |
| Owner–occupier → rent * Utrecht | 0.689 (0.512–0.927) | ** |
| Owner–occupier → rent * The Hague | 0.670 (0.510–0.881) | *** |
| Rent – owner–occupier Amsterdam | 1.641 (1.369–1.967) | *** |
| Rent – owner–occupier Utrecht | 0.797 (0.631–1.008) | * |
| Rent – owner–occupier The Hague | 0.578 (0.466–0.717) | *** |
| <60 m² → 60–100 m² * Amsterdam (ref. = all sizes → 60 m² * Rotterdam) | 6.758 (4.103–11.131) | *** | (Continues)
| Model 1 | Model 2 | Model 3 |
|-----------------|-----------------|-----------------|
| **Odds ratio (lower–upper bound 95% confidence interval)** | **Odds ratio (lower–upper bound 95% confidence interval)** | **Odds ratio (lower–upper bound 95% confidence interval)** |
| Sig. | Sig. | Sig. |
| <60 m² → 60–100 m² * Utrecht | 0.656 (0.292–1.477) |  |  |
| <60 m² → 60–100 m² * The Hague | 1.764 (0.961–3.239)* |  |  |
| <60 m² → >100 m² * Amsterdam | 24.870 (14.897–41.520)*** |  |  |
| <60 m² → >100 m² * Utrecht | 1.152 (0.522–2.543) |  |  |
| <60 m² → >100 m² * The Hague | 1.704 (0.898–3.231)* |  |  |
| 60–100 m² → 60–100 m² * Amsterdam | 5.619 (3.499–9.023)*** |  |  |
| 60–100 m² → 60–100 m² * Utrecht | 0.733 (0.347–1.548) |  |  |
| 60–100 m² → 60–100 m² * The Hague | 1.602 (0.910–2.819) |  |  |
| 60–100 m² → >100 m² * Amsterdam | 23.094 (14.526–36.717)*** |  |  |
| 60–100 m² → >100 m² * Utrecht | 1.112 (0.536–2.307) |  |  |
| 60–100 m² → >100 m² * The Hague | 1.799 (1.026–3.152)** |  |  |
| >100 m² → 60–100 m² * Amsterdam | 3.960 (2.223–7.057)*** |  |  |
| >100 m² → 60–100 m² * Utrecht | 0.537 (0.234–1.233) |  |  |
| >100 m² → 60–100 m² * The Hague | 1.881 (0.978–3.616) |  |  |
| >100 m² → >100 m² * Amsterdam | 19.379 (12.015–31.254)*** |  |  |
| >100 m² → >100 m² * Utrecht | 0.573 (0.292–1.080) |  |  |
| >100 m² → >100 m² * The Hague | 2.318 (1.314–4.089)*** |  |  |
| Value lower after move (<–€10.000) * Amsterdam (ref. = value equal (–€10.000–+€10.000) * Rotterdam) | 0.329 (0.253–0.429)*** |  |  |
| Value lower after move (<–€10.000) * Utrecht | 0.505 (0.362–0.704)*** |  |  |
| Value lower after move (<–€10.000) * The Hague | 0.992 (0.724–1.360) |  |  |
| Value higher—€10.000–€50.000 * Amsterdam | 0.442 (0.339–0.576)*** |  |  |
| Value higher—€10.000–€50.000 * Utrecht | 0.573 (0.417–0.787)*** |  |  |
| Value higher—€10.000–€50.000 * The Hague | 0.939 (0.686–1.286) |  |  |
| Value higher—€50.000–€100.000 * Amsterdam | 0.195 (0.151–0.251)*** |  |  |
| Value higher—€50.000–€100.000 * Utrecht | 0.435 (0.321–0.590)*** |  |  |
| Value higher—€50.000–€100.000 * The Hague | 0.875 (0.650–1.179) |  |  |
| Value higher—€100.000–€150.000 * Amsterdam | 0.110 (0.086–0.141)*** |  |  |
| Value higher—€100.000–€150.000 * Utrecht | 0.421 (0.312–0.568)*** |  |  |
| Value higher—€100.000–€150.000 * The Hague | 0.842 (0.631–1.124) |  |  |
| Constant | 0.144 *** | 0.056 *** | 0.131 *** |
| Nagelkerke R² | 0.105 | 0.208 | 0.246 |

Note: Low income = first quartile; middle income = second–third quartile; high income = fourth quartile. Based on the national distribution of disposable income. Education level low: no education or only general education; middle: intermediate professional education; high: university or higher professional education.

*Significant at the 0.10 level.
**Significant at the 0.05 level.
***Significant at the 0.01 level.
Several other characteristics become less significant, leaving only households with an intermediate education level and larger families with higher odds for moving to the region. Households educated in the social sciences and with a short duration-of-stay at the current address stay less inclined to move to the region. Also, the age of the partner remains a significant variable.

5 | DISCUSSION AND CONCLUSION

Many cities grow demographically, largely caused by a continued inflow of young people from all of the country and also increasingly internationally (Beaverstock, 2012; Turok & Mykhnenko, 2007). These growing numbers of young urbanites boost the formation of new families in the city. As several studies claimed: gentrifiers increasingly settle down in cities, as families (Boterman, 2012). Yet especially high-income families continue to suburbanise. This paper investigated this complex issue by disentangling compositional and rate effects in suburbanisation processes in the four big cities of the Netherlands.

The four studied cities indeed witnessed growing numbers of young families in the period 2006–2016. Just the sheer numbers, a larger number of newly formed families in cities caused a greater flow of young families moving from the city to the suburbs. In gentrifying Amsterdam and Utrecht, the increase of young families is specifically attributed to the rise of high-income families fuelled by the need for higher educated workers in these cities. The increase of upper middle classes in these cities leads to the formation of ‘gentrifier families’. Paradoxically, the odds that gentrifiers move to the suburbs in the region around cities are high compared with other types of young families, resulting in large numbers of families moving from the city to the region around the city. The increasing number of ‘gentrifier families’ in the city seems to be primarily a demographic process and not a result of changing residential preferences of young families. This stability in residential preferences is also found in other studies (Booi & Boterman, 2019; Fugitt & Brown, 1990). The analysis suggests that family gentrification in cities can occur simultaneously with a growing outmigration of (then former) ‘gentrifier families’, possibly leading to ‘spill-over gentrification’ in other parts of the region (cf. Bridge, 2003; Paccoud & Mace, 2018).

The cities Rotterdam and The Hague were more stable in their composition of young families. The population of young families did grow, but not as fast as in Amsterdam or Utrecht. The young families in Rotterdam and The Hague are more often of middle income and/or ethnic minority groups, and the growth of the young families in these cities can be mainly found in this category. The young ‘ethnic minority families’, seem most attached to the city. Just few of them move to the region around the city. Although higher-income families within this group do show higher odds of leaving, it is still lower than the average. Suburbanisation is not absent within this group and some do move into home-ownership (Hamnett & Butler, 2010), but these migrant groups still show a strong urban preference and do not appear to follow the suburbanisation trend in the same pace as the original-Dutch population.

Our analysis shows that the intraregional moving dynamics are largely related to changes in the composition of the population. The increase in outmigration by about +1,100 young families between the two time periods (2005–2006 and 2015–2016) could for +700 families be ascribed to the changing composition of young families. This was mainly caused by the growth of young families in cities in general and in particular the growth of gentrifier families with a high income (which have a high outmigration rate). The changes in moving behaviour (rate effect) appear to be smaller (about +300). This provides evidence supporting the urbanisation-literature arguing that changes in moving behaviour are mostly compositional (Buzar et al., 2005). The change in the rate effect, the increased chance that a family leaves the city to live in the region around it and the differences between the cities seem to be related to the changes and differences in the housing market. The most marked difference between Amsterdam and the other three cities is the influence of the size of the dwelling has on the outflow to the municipalities in the region around the city. The lack of larger homes suitable for families drives young families to the suburbs.

The families that are formed in gentrifying cities are increasingly of higher socio-economic status and less of lower socio-economic status. They have the possibility to choose on the housing market. They often tend to move to the region around cities to find better housing. The case of Amsterdam shows that especially the size of the house matters. When the city does not provide adequate housing for this group, they will leave.

Although the Dutch urban dynamics contexts may have some peculiarities, this finding could also have relevance for other gentrifying cities. Especially the trend, under high market pressure, to build small apartments could become disadvantageously for keeping families in the city.

In this study the main focus is on young families, because they are the main group that moves from the city to the suburbs in the region around the city. Notwithstanding the relevance of families for suburbanisation, by leaving out other household types we also excluded couples that may have moved to the region in anticipation of becoming a young family. Also young people who could not enter the housing market in the city and therefore moved directly to the region around the city are not included in the analysis. Both omissions may lead to an underestimation of the outflow from the city to the suburb related to family formation.

The selection of young families with cohabiting partners and excluding institutionalised households or households sharing an address with multiple households leads to a quite privileged group of young families. Households with young children in a more precarious position like one-parent households, families coresiding with their (grand) parents or in shelters are left out of the analyses. They presumably have lower odds for moving to the region; this omission may lead to an overestimation of the outflow of young families to the suburbs. An avenue for future research could be to broaden the definition of young families by, for example, including one-parent households and households in less regular housing situations.
Finally, the analysis here reduced suburbanisation to a dichotomy (staying within the city or moving to the municipalities in the region of the city). While providing a clear-cut insight into the moving behaviour of young families of different composition, metropolitan regions contain a plethora of rural, suburban milieus and even more urban milieus. Future research might investigate this diversity of suburban milieus. A more detailed and in depth spatial analysis of residential orientations of young families may be required before we will reach sufficient understanding of their moving behaviour.

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NOTES
1 https://www.regioatlas.nl/indelingen/indelingen_indeling/t/woningmarktregio_s_woningwet
2 Less than 3% of the cases contained missings. These missings are grouped in the categories where they most likely belong and/or do not influence the characteristics of main interest.

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