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Who Leaves the City?
The Influence of Ethnic Segregation and Family Ties

Aslan Zorlu

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Aslan Zorlu

*University of Amsterdam
and IZA*

ABSTRACT

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In the last three decades, the population of Amsterdam has been 'coloured' due to immigration flows from abroad and a low outflow rate among these immigrants and their descendants. The question is to what extent differences in spatial mobility behaviour of migrants and natives are generated by neighbourhood characteristics – among which the level of ethnic segregation – and family ties? This article examines spatial mobility process of Amsterdam population using administrative individual data covering the entire population of the city. The analysis shows that Caribbean (Surinamese and Antillean) migrants have a higher probability of moving to suburbs while Moroccans and Turks tend to rearrange themselves within the city. The estimates reveal that neighbourhood 'quality' has only a modest impact on the probability of moving while family ties significantly hamper the out-mobility of all individuals. The impact of family ties is the largest for Turkish and Moroccan migrants.

JEL Classification: J1

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Corresponding author:

Aslan Zorlu
AIAS, University of Amsterdam
Plantage Muidergracht 12
1018 TV Amsterdam
The Netherlands
E-mail: A.Zorlu@uva.nl

Introduction

Post-war migration from developing countries to the Netherlands has been initiated by the independence of former colonies, and economic booming in the 1960s that attracted a substantial number of 'guest workers' from Mediterranean countries. They have been followed by an increasing number of asylum seekers since the 1980s. Despite restrictive immigration policies, immigration flows have continued by family members of earlier immigrants. Different than non-western immigrants, the flow of western immigrants has been more sensitive to business cycles.

The destination location of immigrants has not been random. Immigrants have settled in larger cities, where employment opportunities, appropriate housing facilities and other amenities are concentrated. The presence of immigrants in turn attracts subsequent immigration flows and reinforces the magnet function of cities for immigrants (Zorlu & Mulder, foortcoming). Amsterdam, the largest city in the Netherlands, has attracted many migrants (refering to immigrants and their descendants) while many natives have left the city in the residential suburbanization process, which accelerated in the 1960s. These two opposite flows have led to a stable population size while the share of migrants has increased from a low percentage to 40% in 2005. At the same time, neighbourhoods emerged where particularly non-western migrants are concentrated in the western, south eastern and eastern parts of Amsterdam.. These neighbourhoods are typically also concentration areas of people with a lower educational attanintment and labour market attachment. Consequently, special social policies are designed to prevent and reduce ethnic residential segregation, especially the segregation of those who are at the lower end of the skill and income distribution and who have a poor proficiency of the local language.

For the native population, Amsterdam has typically been seen as a city to inhabit during enrolment in higher education and labour-market during a number of years, after which a different, less urban residential location is chosen to settle down and form a family. On the contrary, immigrants and their children have left Amsterdam less frequently through which the share of people from non-Dutch origin has increased. Little is known about the distinct spatial mobility behaviour of natives and migrants. The question arises to what extent the strong attachment of migrants to Amsterdam can be explained from specific characteristics of migrants and neighbourhoods. This article examines the role of family ties and neighbourhood characteristics in determining the spatial mobility behaviour of natives and migrants, using register data covering the entire population of Amsterdam.

The contribution of this study is threefold. *First*, beyond ethnic networks measured as the degree of concentration of people from the same country of origin in a geographical area, this study emphasises the trigger role of family ties. In previous studies, family ties have been seldom recognised as a determinant of spatial mobility, possibly relying on the assumption that the importance of family in individuals' decision making has decreased in western societies (Mulder, 2007). Two recent studies have shown that family ties matter to spatial mobility in the United States (Spilimbergo and Ubeda, 2004; Dawkins, 2006). Besides, there are some indications that the strength of family ties is possibly greater among immigrants than among natives, especially among those from non-western countries. The unique data with links between parents and children allow us to investigate the specific role of family ties for migrants. The *second* main contribution of the study stems from the utilisation of unusually many neighbourhood characteristics. The rich register data allow us to construct detailed neighbourhood variables measuring neighbourhood ethnic composition, prosperity and housing-market conditions in the neighbourhood. Since migrant status is highly correlated with a lower social economic position for non-western migrants in the Netherlands, the

concentration of these migrants in the neighbourhood is possibly related to neighbourhood prosperity and the availability of affordable housing in the neighbourhood (Zorlu, 2007). This study has the potential to distiguish the ethnic component of spatial mobility from other neighbourhood and individual characteristics. Such an analysis is hard to conduct when survey data are used, as is the case in most studies. *Third*, the study models the location choice behaviour of individuals as a choice set of three destinations: moving within the city, moving to suburbs or long distance. Additionally, not-moving is treated as an option in the choice set. Previous studies analysed spatial mobility in a binary framework in which the probability of moving against not moving was considered without any emphasis on the destination of moving (Alba et al. 1999; Crowder 2000; Sander 2005). In another line of research, the characteristics of destination neighbourhoods in addition to the main individual characteristics are emphasised in a McFadden type multinomial choice framework (Davies et al., 2001), but the characterics of origin neighbourhoods are ignored.

Theoretical and empirical framework

Ethnic concentration in Amsterdam

Since the 1960s, Amsterdam has attracted immigrant groups that dominate the contemporary migrant population due to a combination of large city amenities like employment opportunities and cheap housing facilities. Immigrants have flowed in while native-born residents have left Amsterdam, especially in the second half of the 1970s. Additionally, the natural growth rate has increased from the mid 1980s, largely due to a growing immigrant population with higher fertility (see figure 1). In the beginning of the 21st century, about 40 percent of the Amsterdam population was from a non-Dutch origin. Surinamese, Turks, Moroccans and Antilleans are the biggest migrant groups.

Figure 1. Trend of the Amsterdam population
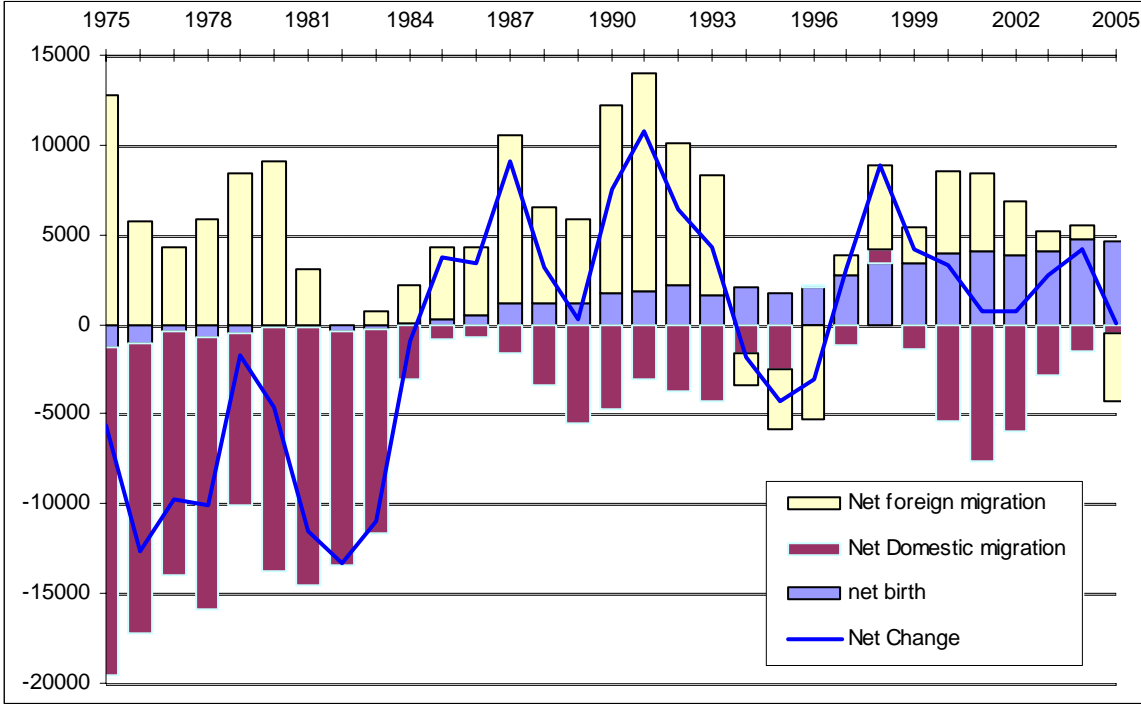
The settlement and contcentration of immigrants have been facilitated by a large public housing sector in addition to the dynamics of the native-born population. A relatively large social housing sector with its lower rents below market-clearing rates has provided suitable

housing facilities for immigrants. A vast majority of immigrants from non-western countries are renters in the social housing market. The availability of cheap rent houses in combination with a weak socioeconomic position and a different household composition of immigrants seems to be a powerful engine to initiate a process of ethnic residential concentration in the sections of the city that were built in the post-World War II period. In these neighbourhoods, the share of social housing is 70 to 80 % while the average is about 55 % for the city as a whole (Teune et al. 2006). The segregation process has likely reinforced itself by two mechanisms. First, the attractiveness of the neighbourhood to other members of ethnic minority grows due to emerging ethnic networks and supply of ethnic goods and services. Second, these neighbourhoods become increasingly less attractive to members of the dominant group who have more opportunities to avoid ethnic enclaves, compared to ethnic minorities for whom housing choices may be constraint by a poor socioeconomic position and discrimination. So, in the course of time, natives have left these neighbourhoods, usually in favour of suburbs, while immigrants have continued to move into but not to leave these neighbourhoods.

Using data from 1994-1996, Deurloo and Musterd (1998) document that three major ethnic minority groups (Surinamese, Turks and Moroccans) have been highly concentrated in some neighbourhoods of the western and southeastern part of the city as well as some neighbourhoods in the eastern part of the city. Among migrants from non-western counties, especially Surinamese and Moroccans reside in these concentration areas. The concentration areas contain more ethnic minority groups than just one. Musterd and De Vos (2007) studied the development of Turkish and Moroccan clusters since 1994. They found no evidence of a systematic increase or expansion of the existing clusters in the following ten years, and argue that the residential mobility of immigrants in this period even reflects some integration. They report a negative migration surplus for Turks and Moroccans in their separate clusters (more outflow than inflow) while a positive birth surplus partly compensates the outflow. Interestingly, other migrants from other non-western countries have moved into the concentration areas while natives have continued to leave them. Their study also provides some evidence on a positive step in the residential careers of immigrants in terms of moving from private to social rental housing and from rental to owner-occupied housing. Despite a growing share of (non-western) migrants in the total population, residential dynamics have not led to the emergence of mono-ethnic neighbourhoods. This outcome is due to a high level of welfare system and specific housing and income policies (Deurloo and Musterd, 1998; Bolt, Hooimeijer and Van Kempen, 2002; Musterd and De Vos, 2007).

These earlier studies investigated the dynamic of ethnic clusters within Amsterdam considering inter area mobility but they ignored inflows from and outflows towards outside Amsterdam. Our study examines the propensity to move to out of the city and within the city across immigrant groups. Since a selective mobility of migrants and natives has led to ethnic residential segregation, the nature of current spatial mobility will indicate whether the process of spatial concentration continues or, on the contrary, dissolution of the concentration has already started.

Spatial mobility
The literature on spatial mobility documents the main triggers of mobility, which can be categorised as life course events, economic factors and neighbourhood characteristics. First, a substantial part of moves is generated by life course events such as completion of schooling, entry into the labour force, marriage, divorce, childbirth, and retirement. Second, people tend to move in order to improve their well being in pecuniary and non-pecuniary sense. This can occur in various forms. People can move for a (better) job. They may be willing to adjust the housing quality to the improvement in their socio economic position by moving to a more

comfortable home in a better neighbourhood. Also, moving from a rented to an owner occupied home can be classified under this category since buying a home is usually regarded as a saving instrument. Finally, people may move to live closer to their family members to exchange care or to maintain contact (see Mulder and Van der Meer in this issue).

Although existing studies explore ethnic and racial differences in household characteristics to understand segregation, most studies have neglected the role of family ties. Only Spilimbergo and Ubeda (2004) consider the role of family attachment on the mobility behavior of blacks and whites in the United States. They show that family ties enhance the degree of attachment to the origin neighbourhood and significantly hamper dissolution of ghettos. Dawkins (2006) demonstrates that local kinship ties and social networks of children deter the mobility of low-income families relatively more. These findings induce us to consider family attachment. We expect that the presence of family members in Amsterdam may hamper the out-mobility of non-western migrants more than of native-born residents of Amsterdam since non-western migrants have stronger indicators of a more traditional lifestyle and family orientation like attitudes toward parents, intensity of family contacts, solidarity within the family, a higher fertility rate etcetera (Schans, 2007).

Finally, preferences may be considered as an important determinant of spatial mobility. Differences in socioeconomic position, family wealth and demographic structure between natives and migrants explain a large part of the ethnic concentration in certain neighbourhoods. Upon these differences, distinct preferences of natives and ethnic minority groups for leaving and not moving to ethnic enclaves possibly play an important role in this process (Schelling 1974, Clark, 1991; Card et al. 2007). Selective movers with various preferences tend to sort themselves across neighbourhoods. Since preferences can vary in time and space, and are partly reflected by many factors that have a potential to explain location choice, they are hard to assess without information on stated preferences. Nevertheless, if preferences are ethnicity-related, the location choice of natives and migrants is possibly positively influenced by the proportion of people from the own country of origin in the neighbourhood.

Relying on the assumption of a stronger preference for living closer to the own ethnic communitity, it is hypothesised that the probability of moving (to suburbs) from more segregated neighbourhoods is larger for native residents than for migrants. A greater share of people from the own ethnic background is expected to be associated with a lower out-mobility. Since ethnically segregated neighbourhoods are associated with a low socio-economic profile of residents, we expect that individuals with a better socio-economic position will tend to leave these neighbourhoods more frequently. This implies a higher probability of moving out of (the more segregated neighbourhoods of) Amsterdam for people, both native-born and migrant, who are more highly educated, employed and earn a higher income.

Destinations of mobility
Residential mobility has been studied in two distinct frameworks by economists, sociologists and geographers. On the one hand, individuals' and households' mobility decisions are supposed to be evaluated in an equilibrium framework in which current housing utility is compared with the utility of potential other housing choices within their budget constraint. On the other hand, residential mobility is viewed as an outcome of dissatisfaction with the current home or neighbourhood. Both approaches consider that the probability of moving is a function of differences between the current and the desired housing or neighbourhood (Clark et al. 2006). However, the interests of these groups of researchers are different. Recently, economists have studied the selective location choice behavior of individuals to measure the

economic impact of geographical mobility while sociologist and geographers are much more interested in the harmful effects of ethnic and racial segregation.

Figure 1. The Percentage of non-western migrants in Amsterdam and suburbs

percentage non-western migrants
■ 21 to 33 (1)
▣ 15 to 21 (3)
▨ 10 to 15 (5)
☐ 5 to 10 (10)
☐ 0.1 to 5 (12)
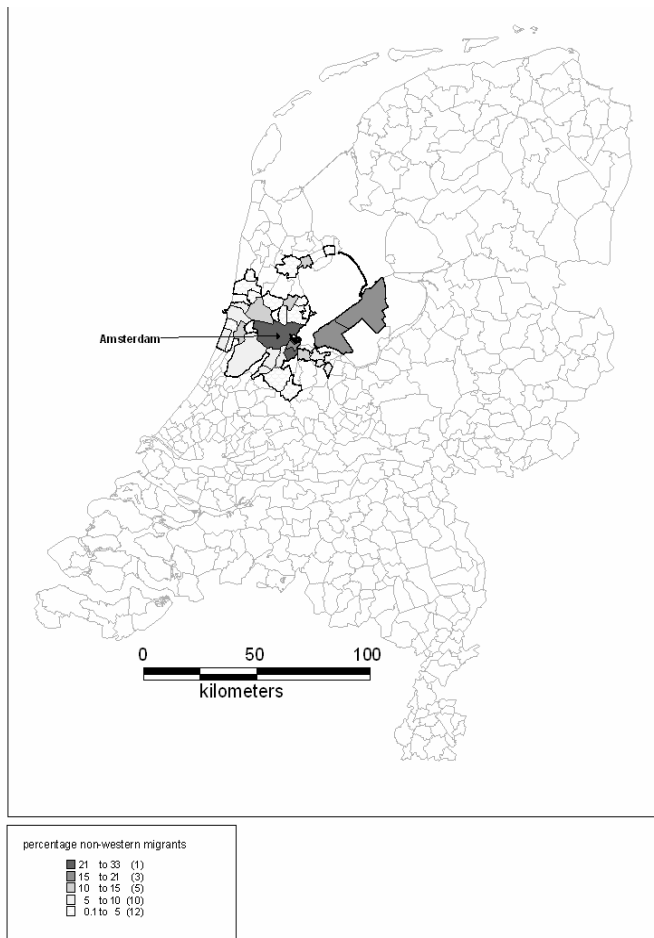
Relying on international evidence, the mobility process within the city maybe seen as an adjustment of household to space, i.e. housing consumption while moving to suburbs can be mainly interpreted as dissatisfaction with the current neighbourhood or an adjustment in tenure and the desire for a more comfortable housing with a garden (Clark and Ledwith, 2006; Clark et al. 2006). Dissatisfaction with the current neighbourhood can raise the probability of moving, in addition to relevant individual characteristics. Such dissatisfaction can arise from a low neighbourhood quality associated with the socioeconomic and physical status of the neighbourhood or from a high concentration of (non-western) migrants in the neighbourhood. Dissatisfaction might be present among both natives and some migrants, because ethnic segregation is often associated with a simultaneous concentration of educational failure, welfare dependency, low labour force participation and crime. Long distance mobility is associated with job related investments such as job seeking or job promotion, rather than housing consumption and neighbourhood dissatisfaction. Since the share of migrants is disproportionably high in Amsterdam and low outside large cities, the spatial mobility towards suburbs and within the city has the highest potential to act as an ethnic sorting process for natives and spatial assimilation for migrants. Although all the types of moves can be affected by a mix of individual, household and neighbourhood characteristics, it is likely that the three potential destinations for movers are associated with distinct factors. First, indivduals can move within in Amsterdam for a better housing. Second, individuals can move to suburbs to avoid exposure to negative neighbourhood effects and to move to a more child-friendly environment. Finaly, they can move a long distance for job reasons. Suburbs are defined on the basis of the share of the labour force that commutes between the residence location and Amsterdam. Surrounding small municipalities are supposed to be suburbs if more than 10 percent of the labour force commutes to Amsterdam for work. Figure 2 shows the percentage of non-western migrants in Amsterdam and the distinguished suburbs on a map of the Netherlands. It appears that the percentage of non-western migrants is the highest in Amsterdam. Among the suburbs, especially Almere has the largest proportion of non-western migrants (the largest darker area in the figure, on the right side of Amsterdam). Almere is a new town, the construction of which has started in the 1970s

6

in an area gained from the water. The rapid growth of Almere in the last two decades has been accompanied by an increasing share of non-western migrants (particularly Surinamese) in this municipality.

Data and Descriptive statistics

The study uses the Social Statistical Database (SSD) of Statistics Netherlands from 2002 and 2003, which is an administrative data file covering all individuals in the Netherlands. We selected those individuals who were registered as living in Amsterdam in 2002. Since no identifier of a household head is included in the data, we restrict our population to individuals who are aged between 18 and 64 years. Members of institutional households and those who are identified as a child in the household are excluded in order to approximate the real decision maker in household. The occurrence of mobility is identified by comparing the residential addresses on the last Fridays of September 2002 and 2003. The availability of data on two points in time enables us to observe the origin and destination neighbourhoods and the changes in individual and household statutes. Since SSD covers the entire population and national geographical area, we have been able to construct aggregate variables on the level of neighbourhoods, which are the smallest available spatial units in the data.

The migrant population in Amsterdam mainly originates from four countries of origin: Surinam, Morocco, Turkey and the Netherlands Antilles. For the analysis, we cluster Surinamese and Antilleans into the group *Caribbeans* on the one hand and Turks and Moroccans (*TM*) on the other, based on inter-group similarities. Caribbeans often speak the Dutch language and bear some cultural elements of the host society because of a common colonial history. On the other side, Turks and Moroccans share a similar pattern of educational attainment and labour-market performance, and most of them are Muslim. The remaining migrants from developing countries comprise another group: other non-western migrants (*ONW*). All migrants from western countries are clustered into a single group: western migrants.

To explain the spatial mobility of residents in Amsterdam, this study employs variables capturing demographic and socioeconomic characteristics of individuals, level of education, neighbourhood characteristics and family ties. For demographic characteristics, age, gender, ethnic background, marital status (single and married) and the number of children in the household are used. In addition to the main demographic and household characteristics, the transition in household structure is also given by two dummy variables indicating the transition between the *single* and *living with a partner* status, which is known to generate an important part of spatial mobility. Individual socioeconomic position is measured by dummy variables defined on the basis of income source as employed, unemployed, student, and inactive, which is the reference category. Additionally, an indicator was created for living in a owner-occupied dwelling. Among migrant communities, the percentage of homeowners is very small upon arrival and grows with the duration of stay (Zorlu and Mulder, foortcoming). That means that housing tenure is of particular importance for ethnic minority groups.

The impact of familiy on the spatial mobility is approximated by the presence of parent(s) and sibling(s), taking the absence of them in the Netherlands (living abroad or not alive) as the reference category. Two dummy variables indicate the presence of *both parents* and just *one parent* in Amsterdam when another parent resides elsewhere in the Netherlands. The last dummy possibly indicates the children of (recently) seperated couples and correspondingly a weaker attachment to Amsterdam. The presence of siblings is captured by three dummy variables. An indicator is included for *all siblings in Amsterdam* when the individual has siblings. Together with the presence of both parents, this variable reflects the strongest local

attachtment due to family ties. Another dummy variable is used for just *one sibling in Amsterdam* when more siblings are present. This is to capture weaker family ties. Finally, a dummy variable is constructed for *no sibling in Amsterdam* to identify individuals who possibly moved to Amsterdam and live separately from their family.

The neighbourhood characteristics are approximated by a set of variables indicating the mean income, the unemployment rates among natives and non-western migrants, the share of owner-occupied homes, the mean value of homes, the shares of the separate migrant groups and the logarithm of population size. Family ties are approximated by dummy variables indicating the presence of parents in the city (both parents in the municipality; one parent; no parents), and the presence of siblings (all siblings, one sibling and no siblings) with parents not alive and the absence of any sibling as the reference categories.

Table 1 gives the descriptive statistics for the individual and neighbourhood-level variables for the five groups. In general, non-western migrants are relatively young and their socioeconomic position is poor. They are less well educated and more often unemployed and reside in neighbourhoods where the value of homes, the income level and the share of owner-occupied homes are low. Among non-western migrants, Turks/Moroccans and other non-western migrants have most different characteristics from natives whereas the position of Caribbeans is close to natives. Despite their more recent migration history, the other non-western migrants seem to have a similar position to Turks and Moroccans who have been in the Netherlands for a longer time. Interestingly, Turks and Moroccans have the lowest employment rate and reside most likely in rental housing with the lowest real estate values. They are most likely married and live in the largest households. Moreover, their parents and siblings reside more likely in Amsterdam.

The demographic characteristics and socioeconomic position of western migrants reflect many similarities to natives. Their spatial distribution across neighbourhoods is also comparable which implies a high degree of spatial integration. The share of second generation migrants reflects the length of migration history. The largest share of second generation is found among Western migrants (about 41%), followed by Surinamese/ Antilleans and Turks/Moroccans. As mentioned, other non-westerners are the most recent migrant group.

Table 1. Mean values of variables by migrant category, September 2002

	Native	Carrib.	TurkMor	OthNW	Western
Individual characteristics					
Age	39.48	37.01	34.82	35.75	38.23
Woman	0.50	0.53	0.47	0.45	0.50
Second generation	0.00	0.21	0.16	0.08	0.41
Employed	0.68	0.57	0.42	0.47	0.57
Unemployed	0.06	0.15	0.16	0.16	0.06
Student	0.07	0.07	0.07	0.05	0.05
Monthly Earnings (in € 1000s)	2.12	1.49	1.06	1.13	1.84
Married	0.28	0.19	0.63	0.33	0.27
Number of children in household	0.48	0.96	1.59	0.87	0.47
From single to couple	0.03	0.01	0.02	0.02	0.02
From couple to single	0.01	0.01	0.01	0.01	0.01
Family ties					
Both parents in Amsterdam	0.14	0.16	0.33	0.07	0.08
One parent in Amsterdam	0.65	0.38	0.13	0.14	0.33
All siblings in Amsterdam	0.16	0.23	0.30	0.09	0.11
One sibling in Amsterdam	0.29	0.38	0.39	0.13	0.17
No sibling in Amsterdam	0.35	0.08	0.02	0.04	0.15
Neighbourhood characteristics					

% Moroccans	6.48	7.58	15.16	8.03	6.40
% Turks	3.87	4.62	9.46	4.91	3.80
% Surinamese	7.42	17.36	9.23	13.72	7.39
% Antillean	1.22	3.21	1.23	2.54	1.27
% Oth. non-west	7.40	13.01	8.98	11.86	7.69
% Western	14.80	11.14	11.25	12.38	15.90
Change in % non-western 1999-2002	1.97	2.68	3.36	2.74	1.86
Log value of homes in € 1000s	145.00	110.40	107.04	119.25	150.96
Labour income	25300	21844	20715	22633	26084
Log neigh. population	9.09	9.45	9.27	9.31	9.10
% owner-occupied houses in neighb.	17.56	12.75	9.09	13.75	17.18
Household size	1.76	1.87	1.87	1.82	1.71
Unemp. rate natives in neighbourhood	5.37	6.30	6.93	6.30	5.50
Unemp. rate non-western in neighbourhood	13.07	14.52	15.41	14.37	13.17

Table 2 displays the propensity to move to various destinations. The spatial mobility of non-western migrants is the highest. They move relatively more likely within the city. Natives movers head for suburbs more likely than others, but especially for long distance moves. Long distance moves are clearly less popular among all migrant groups. Interesting is the relatively strong mobility of Caribbeans towards suburbs. Turks and Moroccans movers remain more likely within Amsterdam.

Table 2. The propensity to move by immigrant groups in Amsterdam, 2002-2003

	No move	Within	Suburb	Long Dist.	Total
Native	88.61	7.12	2.27	2.00	258,759
Surinamese/Antillean	85.64	10.06	2.94	1.36	49,188
Turkish/Moroccan	87.32	10.92	1.25	0.52	53,221
Other Non-Western	85.39	11.12	2.18	1.32	41,885
Western	89.24	7.68	1.76	1.32	73,822
Total	87.97	8.28	2.14	1.61	476,875

In addition to the variables reported in table 1, the models include a set of indicator variables measuring the level of completed education. Data on education is, however, available only for a sample of about 27 percent of the population (see table 3). The upper part of table 3 shows the educational distribution of the entire population and the share of those for whom education is unknown. The migrant groups are underrepresented in this sample. Level of education is known for 17, 10, 13 and 23 percent of Caribbean, Turks/Moroccans, Other non-western and western migrants respectively, while this percentage is about 36 for natives. These sample data are still in a stage of development and the availability of information on education is selective. Nevertheles, we include an education variable, as a first exercise, in our regression analysis after carefully performing a number of selectivity checks[1]. Education is in fact one of the key variables in this type of research. The results presented in table 4 and 5 on

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[1] We estimated separate models using various populations to assess effects of possible selectivity on the coefficients of education dummies and on the coefficients of other variables in the model. First, a model was estimated using the whole population without education dummies. Second, another model was estimated using the selective population for which education is known. Third, the last exercise was repeated using weights constructed to raise the sample to the true population. Fourth, another model was estimated using the population for which education is known without education variable. Then, a model with education dummies was estimated using the whole population. Finally, these exercises were performed using the population of migrants, excluding natives. These exercises showed that education dummies have statistically significant effects on long distance moves as displayed in table 4, while changes in other coefficients in the model were modest.

the direction and statistical significance of the impact of education are proven to be consistent to all these checks. However, the true magnitude of the impact may still be different from the results presented in this study. Therefore, the impact of education needs to be interpreted with caution.

The weighted figures, shown in the lower part of table 3, reflect a more realistic distribution of educational attinament accros the groups. Among non-western migrants, Turks and Moroccans have the lowest level of education. They are followed by Caribbean and other non-western migrants. The level of education of western migrants is very similar to that of natives.

Table 3. Educational attaintment

	Native	SurAnt	TurkMar	OthNonWest	Western	Total
UN-WEIGHTED						
Primary	0.7	1.2	1.5	1.0	0.6	0.9
Secondary	2.4	2.8	1.8	2.6	2.3	2.4
Higher Secondary	9.8	7.0	4.5	5.2	7.4	8.1
High Vocational	10.1	4.1	1.9	2.5	5.3	7.1
University	13.4	2.3	0.7	2.1	7.4	8.8
Missing	63.6	82.6	89.5	86.6	77.0	72.8
Total	100	100	100	100	100	100
WEIGHTED						
Primary	19.7	39.5	63.3	40.4	21.8	28.0
Secondary	13.2	21.8	13.6	22.1	15.0	15.0
High Vocational	22.1	20.8	13.7	12.7	21.2	20.2
University	21.1	12.3	5.6	15.3	18.9	17.9
WO	24.0	5.5	3.7	9.6	23.1	18.9
Total	100	100	100	100	100	100

The Model

For an individual, characteristics of the origin location are central to this study, rather than characteristics of destinations, as mentoned before. The residents of Amsterdam are categorized to stay in the current dwelling or to move to the three potential destinations: *moving within the city*, *moving to suburb* or *moving long-distance* to a different municipality. *Not moving* is considered to be an option in the choice set, assuming that each individual household is able to move, conditional on individual and neighbourhood characteristics. Suburbs refer to the some surrounding municipalities of Amsterdam as illustrated by figure 1. A Hausman test on the independence of irrelevant alternatives (IIA) assumption using the whole population is strongly rejected, which supports the application of our model with the four outcomes.

Moving to suburbs is of particular importance because this mirrors the behaviour of leaving ethnically segregated neighbourhoods in the urban area, in addition to socio-economic upward mobility and classical life cycle events, like having children, which is usually associated with a wish to live in a larger and more comfortable dwelling in a better neighbourhood. Moving to suburbs may also reflect distinct meanings for natives and ethnic minorities. It can indicate a 'white flight' for natives while it will indicate spatial mixing of ethnic minorities with natives.

We consider a regression model in which the propensity to move is determined by characteristics of individuals (X_i), origin neighbourhood (Z_n) and variables measuring the presence of parents and siblings (M_i) .

$$y_{ij} = \alpha_j + \beta_j X_i + \gamma_j Z_n + \delta_i M_i + \varepsilon_{ij} \qquad (1)$$

Assuming that an individual household bases its decision on the evaluation of the four choices simultaneously, the location decision behaviour of households is assumed to follow a multinomial choice process, given by

$$P\left(y = j | X, Z, M\right) = \exp\left(\beta_j X_i + \gamma_j Z_n + \delta_i M_i\right) \Big/ \left[1 + \sum_{k=1}^{4} \exp\left(\beta_j X_i + \gamma_j Z_n + \delta_i M_i\right)\right] \qquad (2)$$

Conditional on destination type, this approach asseses the invidual determinants of moving from neighbourhoods with various degrees of ethnic segregation, economic prosperity and other amenities as well as the determinants of the choice of a certain destination.

Firstly, equation 2 is estimated for the separate migrant groups and natives. Subsequently, a separate model is run for the second generation migrants [2], since this group is a distinct population with a younger age structure, a higher level of education and, correspondingly, different spatial mobility behaviour as a result of a more advanced integration into the the Netherlands society.

Estimation results

We estimate multinomial logit models for the native population and the four separate migrant groups and present the estimation results in Table 4. To facilitate an easy interpretation of the effects of the variables, relative risk ratios are displayed rather than coefficients.

The impact of family ties
The presence of all family members (both parents and all siblings) seems to significantly hamper spatial mobility out of Amsterdam, especially over long distances. When both parents are in Amsterdam, the probability of long distance moving is significantly lower for all ethnic groups, but this effect is stronger for Turks/Moroccans (TM) and other non-western migrants (ONW), and the smallest for western and Caribbean migrants (Carrib). Natives occupy an inbetween position. For moving to suburbs, the estimated relative risk ratios for the variable Both parents in Amsterdam are statistically significant only for Natives and Caribbeans. These are typically groups with a higher probability of moving to suburbs.. For these groups, the presence of parent(s) is also associated with a low probability of moving within the city. The presence of one parent seems to be relevant only for Caribbeans and has hardly any significant effect on the mobility of other groups. The presence of all siblings in Amsterdam leads to a significantly lower probabiilty of moving long distances for almost all groups (except other non-western), and this effect is the strongest for Turks/Moroccans. More striking is the effect on moving to suburbs. Individuals whose siblings live in Amsterdam from all migrant groups are less likely to move to suburbs, but this is not true for the native group. The relative probability of moving to suburbs is again the lowest for Turks/Moroccans whose siblings all reside in Amsterdam. On the other extreme, individuals who have no sibling in Amsterdam have a substantially higher probability of moving to suburbs, and especially of moving long distances. Once again, these relative probabilities are the highest for Turks and Moroccans, and the lowest for natives.

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[2] The second generation refers to those who were born in the Netherlands from immigrant parent(s).

The impact of neighbourhood characteristics

Remarkably, the impact of neighbourhood characteristics on mobility behavior is much more pronounced. The most striking findings are a lower probability of moving to suburbs for Turks/Moroccans who reside in neighbourhoods where people from the same country of origin are concentrated, whereas the probability of moving to suburbs is significantly higher for individuals who reside in neighbourhoods where the concentration of non-western immigrants increased between 1999 and 2002. Interestingly, however, Turks/Moroccans and Caribbeans leave these neighbourhoods slightly more frequently than natives. Other neighbourhood characteristics are less relevant for the mobility towards suburbs and almost negligible for moving long distances.

Effects of neighbourhood characteristics are mainly found in the probability of moving within Amsterdam. There is some evidence that the probability of moving within the city is higher for people who live in neighbourhoods with a higher concentration of Antilleans and western migrants, and lower for those residing in neighbourhoods with a higher proportion of Surinamese and other non-western migrants. Additionally, the probability of moving within the city is particularly higher for individuals residing in neighbourhoods where the mean size of households is larger and where unemployment among non-western migrants is higher. Such a mobility possibly emerges as a result of active social policies designed to upgrade disadvantaged neighbourhoods, although this is hard to demonstrate with our data. These results may be seen as evidence that dissatisfaction with neighbourhood ethnic composition does not generate much spatial mobility within Amsterdam.

In summary, no evidence is found on ethnically motivated spatial mobility among the residents of Amsterdam, given neighbourhood economic conditions. Our results even show a slightly higher mobility of migrants out of more segregated areas compared to natives. However, there is some evidence that Turks/Moroccans move less likely to suburbs from the neighbourhoods where their co-ethnics are concentrated, given their observed characteristics.

Table 4. Multinomial logit estimates by country of origin, relative risk ratios; Not moving is the base category

	Native	Carrib	TM	ONW	West	Native	Carrib	TM	ONW	West	Native	Carrib	TM	ONW	West
	Within					Suburb					Long D				
Family Ties															
No parents in the NL (Ref)															
Both parents in Amsterdam	0.767***	0.795**	0.924	1.030	0.924	0.803**	0.654**	0.985	0.577*	1.112	0.335***	0.606*	0.258**	0.274**	0.585*
One parent in Amsterdam	0.892***	0.812**	0.882	0.857	0.946	0.944	0.793*	0.912	0.940	1.056	0.974	0.823	0.493*	0.774	1.283
No siblings in the NL (Ref)															
All siblings in Amsterdam	0.966	1.089	1.081	1.090	0.986	0.976	0.651***	0.438***	0.580**	0.631***	0.659***	0.671*	0.312***	0.592	0.613**
One sibling in Amsterdam	1.040	1.053	0.966	0.857	1.146	0.948	1.222	1.346	1.515	1.253	0.933	0.654*	2.285*	0.968	1.312
No sibling in Amsterdam	1.000	1.065	0.991	0.822	1.049	1.201***	1.626***	2.408***	1.424	1.397**	1.367***	1.617**	6.066***	1.760*	1.711***
Neighbourhood characteristics															
% Moroccans	1.018***	1.019**	1.005	1.019**	1.018*	1.008	0.999	0.994	1.013	1.022	1.041***	1.023	0.995	0.981	0.995
% Turks	1.013*	1.003	1.019**	1.002	1.017	1.008	1.009	0.940**	0.974	0.973	0.969**	0.947*	1.002	1.019	1.020
% Surinamese	0.977***	0.974***	0.968**	0.977***	0.975**	1.006	0.999	1.026	1.001	1.004	1.003	0.982	0.990	0.988	1.043*
% Antillean in neigh.	1.213***	1.407***	1.346***	1.233***	1.283***	1.034	1.011	0.932	0.978	1.036	1.180***	1.146	1.226	0.979	0.892
% Other Non-western	0.996	0.949***	0.973*	0.996	0.979*	0.999	1.009	1.007	1.005	0.991	0.970**	0.986	0.965	1.017	1.004
% Western	1.060***	1.098***	1.082***	1.049***	1.052***	1.008	0.975	1.012	0.984	1.009	1.004	1.032	1.026	1.003	0.987
Δ in % Non-West 1999-2002	0.997	1.035**	0.982	1.018	1.014	1.047***	1.051**	1.064*	1.025	1.050**	1.019	1.043	1.020	1.006	1.027
Log value of home	1.000	0.998	1.005**	1.000	1.001	0.996***	1.000	0.998	0.999	0.996*	0.997**	1.000	1.001	1.001	1.002
Mean labour income	1.010	0.990	0.932***	0.980	0.980	1.023*	1.016	1.000	0.991	1.005	1.041***	0.970	1.010	0.980	0.990
Log population	0.972	0.890*	1.067	1.090	1.051	0.985	0.906	0.971	0.996	1.058	0.970	0.871	1.133	0.817	0.973
% owner occupied house	1.000	1.010*	1.001	1.003	1.001	0.989***	1.004	0.985	1.000	0.986**	0.995*	1.000	1.002	1.006	0.989
Mean household size	1.453***	1.689**	1.442**	1.078	1.105	1.186	0.601	1.106	0.991	1.513	1.063	1.440	0.895	2.117	0.484*
Unemployment. rate natives	1.041***	1.010	0.974*	0.975	1.035*	0.961**	1.009	1.014	1.031	0.979	0.998	1.022	1.079	1.003	0.931*
Unemployment rate Non-West	1.016***	1.076***	1.049***	1.039***	1.004	0.997	0.983	0.980	0.938***	0.970*	0.997	1.023	1.021	1.002	1.005
Individual Characteristics															
Age	0.890***	0.912***	0.931***	0.931***	0.911***	0.883***	0.907***	1.050	0.950	0.909***	0.907***	0.900***	1.025	0.925*	0.896***
Age-squared	1.001***	1.001***	1.000**	1.000*	1.001***	1.001***	1.000	0.998**	1.000	1.001*	1.000	1.000	0.998	1.000	1.001*
Woman	0.898***	0.705***	0.736***	0.754***	0.942*	1.057*	1.032	1.010	1.067	0.940	0.975	0.828*	0.999	0.858	0.908
Antillean		1.031					0.854					1.828***			
Second generation		1.093	1.189***	1.049	0.903*		0.827*	1.505***	0.886	1.352***		1.023	1.188	1.093	1.195
Moroccan			0.909**					0.590***					0.942		
Primary edu (Reference)															
Secondary education	0.892	1.070	1.059	1.670*	1.861*	0.629*	0.939	0.756	1.360	1.182	3.518**	2.940	0.640	2.888	1.883
Upper Secondary education	0.899	1.085	0.885	1.405	1.550	0.616**	0.943	0.754	1.233	0.841	2.931**	2.412	1.110	3.191	1.308
High Vocational education	1.006	0.861	1.154	1.199	1.576	0.657**	0.874	0.826	1.218	0.767	3.632**	1.677	1.140	3.630	1.637
University education	0.994	1.030	0.935	1.190	1.582	0.582***	0.745	0.569	1.248	0.673	4.070***	2.501	0.880	3.639	1.722
Education missing	0.864	1.091	1.031	1.374	1.427	0.783	0.856	0.670	0.827	0.722	2.605*	2.037	0.653	2.337	1.110
Married	0.782***	0.922	0.843***	0.749***	0.917*	1.881***	1.472***	1.318**	1.419***	1.948***	1.328***	1.084	0.615**	0.880	1.298**
Employed	0.996	1.085	1.162***	1.288***	1.730***	1.242***	1.403***	2.083***	1.695***	1.796***	0.765***	0.743*	1.162	0.880	1.166
Unemployed	1.306***	1.266***	0.948	1.184***	1.775***	0.873	0.562***	0.472**	0.485***	0.683*	0.646***	0.717*	0.795	0.717*	0.854
Student	1.075	0.966	1.199**	1.161	1.963***	0.620***	0.913	1.949***	1.345	0.921	0.689***	0.719	1.205	1.019	1.163
Labour income	0.995	0.888***	0.991	0.978	1.003	1.026***	1.067***	1.125***	1.021	1.015*	1.027***	0.940	0.933	0.973	1.016*
Home owner	0.842***	0.666***	0.897	0.875	0.857***	0.856***	0.598***	0.621*	0.651**	0.858	0.963	0.969	0.771	0.799	0.957
# children in household	0.973	0.961*	0.912***	0.906***	0.927**	1.001	0.986	0.805***	0.935	1.065	0.979	0.801***	0.648***	0.761***	0.893
From single to married	1.290***	1.643***	1.829***	1.165	1.488***	2.478***	2.739***	2.380***	2.457***	2.896***	2.235***	3.314***	3.926***	1.077	2.835***
From couple to single	6.767***	3.296***	4.220***	3.900***	3.928***	2.687***	1.101	2.298**	1.410	0.124*	2.889***	3.877***	7.474***	2.099	4.443***
Constant	0.333***	0.244	0.207*	0.131**	0.110***	0.740	3.553	0.045	0.459	0.117	0.109**	0.488	0.004	0.312	0.831
LR chi2	16314	3308	3745	2362	3649										
N	253204	48375	52399	40983	72256										

Robustness of inter-group differences in the effects of family ties and neighbourhood characteristics

Because native-migrant differences in the estimated parameters for the variables indicating the presence of family members and neighbourhood characteristics are often small, we test whether these differences are statistically significant. Since equation 2 is separately estimated for natives and migrant groups, the estimates are not directly comparable. To be able to compare the coefficients of interest accros the models, the seemingly unrelated regression technique was applied (Weesie, 1999). That is; equation 2 was simultaneously estimated for the native population and migrant group *j*. In this way, the parameter estimates were made comparable between natives on the one hand and separate migrant groups on the other hand, so that a variety of tests on the estimated coefficients across the models could be performed. Note that we did not test possible differences between immigrant groups.

We performed three tests on the equality of the effects of the presence of family members between natives and migrant groups, and three tests on the effects of neighbourhood characteristics. Firstly, equality of the coefficients on the presence of both parents and one parent was simultaneously tested for natives and immigrant group *j* in the outcome of moving to suburbs and long distances (I). Such an exercise was repeated for the coefficients on the presence of siblings (II), the neighbourhood ethnic composition (IV) and neighbourhood prosperity (refering to other neighbourhood characteristics) (V). Additionally, equality of the coefficients on parents and siblings was simultaneously tested to capture any interrelated effect of family networks (III). Similarly, equality of the coefficients of all neighbourbourhood characteristics was simultaneously tested to take into account the correlation between neighbourhood ethnic composition and neighbourhood prosperity (VI). Formally, the null hypotheses may be formulated as

H_0 : the coefficients of native-born and immigrant group *j* are equal

I. $\gamma_{parents}(\text{Native}) = \gamma_{parents}(I_j)$: the presence of both parents or one parent

II. $\gamma_{siblings}(\text{Native}) = \gamma_{siblings}(I_j)$: the presence of all siblings, one sibling or no sibling

III. $\gamma_{par+sib}(\text{Native}) = \gamma_{par+sib}(I_j)$: I and II together

IV. $\gamma_{EthComp}(\text{Native}) = \gamma_{EthComp}(I_j)$: coefficients of neighbourhood ethnic composition

V. $\gamma_{EcCond}(\text{Native}) = \gamma_{EcCond}(I_j)$: coefficients of neighbourhood prosperity

VI. $\gamma_{EthComp}(\text{Native}) = \gamma_{EthComp}(I_j)$: IV and V together

The test results in table 5 show that the null hypothesis is often rejected for the variables indicating the presence of family members, seldom for the neighbourhood characteristics. Neighbourhood characteristics generate different spatial mobility within Amsterdam for natives and non-western migrant groups. Towards outside the city, neither neighbourhood ethnic composition nor neighbourhood prosperity lead to a distinct mobility behaviour between natives and migrant groups.

The impact of the presence of family members, both parents and siblings, in Amsterdam on the probability of moving out of the city differs between natives and Caribbeans, and also between natives and Turks/Moroccans. Looking at the probability of moving to suburbs, remarkably, only the impact of the presence of siblings differs between these groups. The

presence of parents does not generate differences in the mobility behaviour of natives and migrant groups. These results confirm that beyond ethnicity, the impact of family ties is stronger for Turks and Moroccans than natives and other groups.

Table 5. Tests on native-migrant differences in the effects of the presence of family members and neighbourhood characteristics. The null hypothesis is that the coefficients of native-born and immigrant group j are equal.

	Caribb.	TurMor	OthNW	West
WITHIN				
Neighbourhood characteristics				
The effect of ethnic composition of the neighbourhood	Rejected	Rejected	X	X
The effect of neighbourhood prosperity	Rejected	Rejected	Rejected	R
The effect of ethnic composition and prosperity	Rejected	Rejected	Rejected	Rejected
SUBURB				
The presence of family members				
The effect of the presence of parents in Amsterdam	X	X	X	X
The effect of the presence of siblings in Amsterdam	Rejected	Rejected	X	R
The effect of the presence of parents and siblings in Amsterdam	Rejected	Rejected	X	Rejected
Neighbourhood characteristics				
The effect of ethnic composition of the neighbourhood	X	X	X	X
The effect of neighbourhood prosperity	X	X	R	X
The effect of ethnic composition and prosperity	X	X	Rejected	X
LONG DISTANCE				
The presence of family members				
The effect of the presence of parents in Amsterdam	Rejected	R	X	X
The effect of the presence of siblings in Amsterdam	Rejected	Rejected	X	X
The effect of the presence of parents and siblings in Amsterdam	Rejected	Rejected	X	Rejected
Neighbourhood characteristics				
The effect of ethnic composition of the neighbourhood	X	X	Rejected	X
The effect of neighbourhood prosperity	X	X	X	X
The effect of ethnic composition and prosperity	X	X	Rejected	X

Rejected: the equality of coefficents are rejected at the 1% level
R: the equality of coefficents are rejected at the 5% level
X: the equality of coefficents can not be rejected at the 10% level

The effects of individual characteristics

In line with the literature, age has a negative effect on the probability of moving (see table 4). A gender difference is found only for the probability of moving within the city, where women are less likely to move. Level of education seems to affect the spatial mobility only of natives: highly educated natives are significantly more likely to move long distances while those with a higher education move, on the contary, less likely to suburbs. The first result confirms the high geographical mobility of higher educated people which is systematically reported in the international literature (Mulder, 1993) while the second finding reflects the importance of Amsterdam for highly educated people as a residential location and the popularity of suburbs for less well educated natives in the Dutch context. Strikingly no statistically significant effect of level of education on the geographical mobility of migrants is found[3]. The socioeconomic position has some common but varying effects on the probabilities of moving across the groups. The common effect is a higher probability of employed people to move to suburbs, although the size of this effect varies between the ethnic groups. This mobility may typically

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[3] Wald tests on the significance of education dummies in the outcomes of moving to suburbs and long distance are systematically rejected for the migrant groups.

reflect an adjustment between high quality housing available in the suburb and an increasing demand for housing supported by a rise in family wealth. The effect is strikingly the greatest for Turks and Moroccans and the smallest for natives. This implies that having a job is more influential for immigrants' spatial mobility than for that of natives. Considering inter-group differences, employed Turks/Moroccans and western migrants have higher probabilities of moving within the city while this does not hold for the other groups. The probability of long-distance moving is lower for the employed natives and Caribbeans but it is higher for employed western migrants. The impact of unemployment is diverse across the groups. Unemployed natives and Caribbeans have lower probabilities for long-distance moving but higher probabilities for moving within the city. The probability of moving to the suburbs is negatively associated with unemployment among all immigrant groups. Native students have lower probabilities to move outside the city while Turkish and Moroccan students have higher probabilities to move to suburbs and within the city. In short, the impact of socioeconomic position on the mobility behavior of natives and Caribbeans shows close similarities while Turkish/Moroccan and western migrants experience more different effects.

Home ownership seems to deter mobility within the city and to the suburbs for natives and Caribbeans but it seems to be irrelevant for Turks/Moroccans, possibly due to a small variation caused by a low rate of home ownership among them. The effect of household composition is also somewhat different for Turks/Moroccans. Single individuals usually have a low probability of moving, regardless of the direction of moving, while married people have a higher probability of moving to the suburbs but lower probabilities of moving within the city. In general, the probability of moving is lower, the greater the number of children in household. As expected, a change in marital status from single to partnership or from partnership to single generates a significant amount of spatial mobility among all groups. However, the degree of mobility is different across the ethnic groups and by the destination of moving. Marriage seems to trigger especially long-distance spatial mobility while seperation also leads to a higher probability of moving within the city.

Intergenerational differences in the mobility patterns of the ethnic groups are reflected by the estimated relative risk ratios for the second generation. It is remarkable that the second generation of Surinamese and Antillean has a lower probability of moving to suburbs, and no intergenerational difference is observed for long-distance moves and moving within the city. In contrast, the analysis provides some evidence of a greater spatial mobility of the second generation of Turks and Moroccans. They have a higher probability to move to another address in Amsterdam but especially to suburbs compared to their parents. The western second generation has a higher probability to move outside the city but a lower probability of moving within the city.

Second generation migrants

Intergroup differences in mobility behaviour and the impact of family and neighbourhood are possibly more pronounced for the second generation because the mean age of the second generation is lower and this relatively young population has more likely parents and siblings in the Netherlands. Besides, spatial mobility is the highest for younger people, as discussed before. The question is what extent the spatial mobility behaviour of the second generation is affected by family ties and the neighbourhood where they live.

To assess this, we estimated a separate multinomial logit model for the sub-population of the second generation using similar variables as in earlier analyses. Table 6 shows the relative risk ratios. The estimates indicate that the mobility behaviour of migrant youth does not differ across the education levels. The fixed effects for the country of origin indicate that the

16

probability of moving within the city is higher only for the Surinamese compared to western migrants. Also the probabilities of moving to suburbs are significantly higher for Surinamese and Antillean while these are relatively low for Turkish second generation. Considering the variables for family ties, the presence of parents in Amsterdam has a negative effect on the probability of long-distance moving only. The presence of all siblings is associated with lower probabilities of moving outside the city. In contrast, the probability of moving is substantially higher when no siblings or just one reside in Amsterdam. We may conclude that the results are similar to the results for all migrants.

Table 6. Multinomial logit model for second generation migrants, relative risk ratios

		Within	Suburb	Long
Family Ties	No parents in the NL (Reference)			
	Both parents in Amsterdam	0.984	0.845	0.307***
	One parent in Amsterdam	0.965	0.934	0.939
	No siblings in the NL (Reference)			
	All siblings in Amsterdam	1.026	0.571***	0.534***
	One sibling in Amsterdam	1.175*	1.263*	1.404*
	No sibling in Amsterdam	1.115	1.550***	1.955***
Neighbourhood characteristics	% Moroccans in neigh.	1.008	1.016	0.965*
	% Turks in neigh.	1.013	0.960*	1.021
	% Surinamese in neigh.	0.985	1.007	1.031
	% Antillean in neigh.	1.142***	0.904	0.819*
	% Oth.non-west in neighb	1.002	1.027	1.024
	% Western	1.058***	0.976	0.979
	Δ in % non-western 1999-2002	0.993	1.020	1.028
	Log value of home (in 1000s)	1.000	0.999	0.999
	Mean labour income	1.000	1.000	1.000
	Log population	1.010	0.906	0.956
	% owner occupied houses	1.001	0.984**	0.981**
	Mean household size	1.350*	1.200	0.825
	Unemployment rate natives	0.995	0.972	1.015
	Unemployment rate non-western	1.024***	0.983	1.008
	Age	0.866***	0.912***	0.891***
	Age-squared	1.001***	1.000	1.001
	Woman	0.912**	0.939	0.851*
Individual characteristics	Primary education (reference)			
	Secondary education	1.004	1.301	2.464
	Upper Secondary education	0.934	1.183	1.785
	High Vocational education	0.959	1.213	2.317
	University education	0.959	1.015	2.429
	Education missing	0.940	1.089	1.682
	Turkish	1.090	0.633**	0.817
	Moroccan	1.165	0.768	0.830
	Surinamese	1.126	1.155	1.116
	Antillean	1.119	1.280	1.272
	Western	1.014	0.928	1.149
	Married	0.927	1.968***	1.618***
	From single to couple	1.635***	2.772***	2.453***
	From couple to single	3.405***	0.746	3.824***
	# children in household	0.934**	1.030	0.864*
	Employed	1.043	1.454***	0.904
	Unemployed	1.184*	0.637*	0.787
	Student	0.971	0.934	0.901
	Earnings	1.003	1.017*	1.014
	Homeowner	0.951	0.796*	0.991
	Constant	0.612	0.961	0.271
	LR chi2	3754		
	N	45999		

Not moving is the base category

Conclusion

While immigration flows have continued to the Netherlands, the share of migrants has risen significantly in the population of Amsterdam since the 1960s. The native suburbanization process has created necessary space in the city so that inflows of immigrants could be absorbed without a growth in population size. The question is whether the tendency of concentration has continued or a migrant suburbanization process has started. This paper has studied the spatial out-mobility of migrants, especially toward the surrounding locations where the share of migrants is significantly lower than in Amsterdam. In order to examine a possible dispersal of migrants from Amsterdam, the spatial mobility was modelled as a multinomial logit process including three destinations in addition to not moving: moving within the city, to suburbs or to other municipalities. The outflow of migrants to suburbs can be interpreted as geographical diffusion since this mobility reflects, in effect, an increase in geographical proximity of migrants to natives.

The analysis provodes evidence that family ties significantly hamper spatial mobility out of Amsterdam, especially over long distances. Although this holds for all groups, the impact of family ties is the strongest for Turks and Moroccans. The presence of both parents in Amsterdam seems to hinder the spatial mobility over long distances while the presence of siblings induces lower probabilities of moving to suburbs for migrants but not for natives. On the other hand, the absence of sibling(s) is associated with higher probabilities of moving to suburbs and moving long distances.

Considering a possible triggering role of neighbourhoods, there is some evidence that Turks/Moroccans move less likely to suburbs from neighbourhoods where their co-ethnics are concentrated, given observed individual characteristics and neighbourhood prosperity. The estimates show that the probability of out-mobility is correlated neither with the spatial concentration of migrants in the neighbourhood nor with the prosperity level of the neighbourhood.

The analysis reveals that Moroccan and Turkish people tend to rearrange themselves within Amsterdam, rather than leaving the city, while Caribbeans are more likely to leave Amsterdam, especially to suburbs. The relatively big outflow of them to suburbs reflects a diffusion of Surinamese and Antillean clusters in Amsterdam but not necessarily their increasing geographical proximity to natives, since more than half of the movers head for a single municipality, Almere, where a concentration of Caribbean people has arisen.

The study has documented that a substantial part of geographical mobility is triggered by demographic transitions in households, namely changes in partner status. In line with findings in the literature, age has a strong impact on the spatial mobility, and social economic position significantly influences the probability of moving. Education has a significant impact on the probability of moving to long distance locations among natives. Surprisingly, the geographical mobility behaviour of both first and second generation migrants is insensitive to level of education. This implies a low propensity for migrants with higher education to move to long distance locations compared to natives.

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