



Defining subsequent moving patterns and characteristics of international migrants in metropolitan Amsterdam

Master's Thesis Population Studies, Faculty of Spatial Sciences

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1. Abstract

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This research analyzes international migrants who arrived in Amsterdam in 2013 and performed a subsequent move within a short time frame. The study shows that international migrants aged 25-34 are generally most mobile. Also, male international migrants perform more subsequent moves than female international migrants, with an exception of subsequent international moves. Furthermore, Western international migrants exhibit more subsequent international moves, whereas non-Western international migrants perform more subsequent moves within the Netherlands. In a second analysis, theories of spatial assimilation are tested to define differences in subsequent moving patterns of Western- and non-Western as well as highly skilled and non-highly skilled international migrants. The main predictions of theories of spatial assimilation are mostly confirmed as both highly-skilled migrants and Western migrants show a higher likelihood than non-highly skilled- and non-Western migrants of moving towards areas where the Dutch native population resides.

Keywords: subsequent migration, highly skilled migrants, spatial assimilation, residential mobility.

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2. Introduction

The city of Amsterdam has experienced population growth since the late 1990's (OIS, 2019). In the past decade, this population growth was mostly linked to foreign migration. Migrants from the United Kingdom, India, the United States of America and many other countries have moved to Amsterdam, visible in Figure 2.1. The reasons to migrate vary widely.

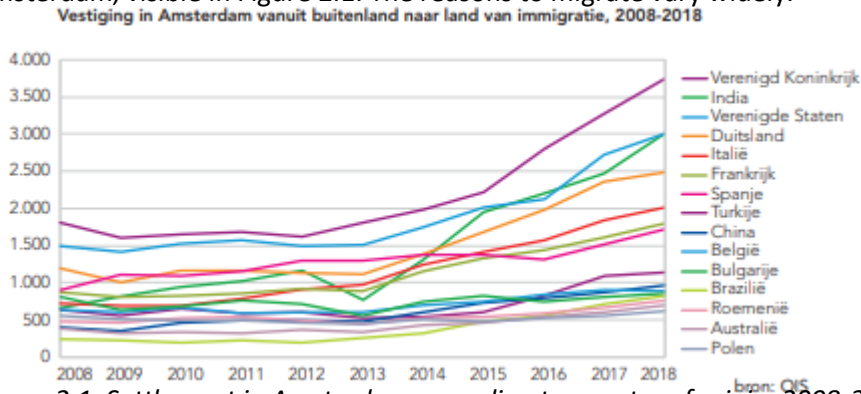


Figure 2.1: Settlement in Amsterdam according to country of origin, 2008-2018 (OIS, 2019).

Interesting to note is the large difference between internal and international migration. Whereas international migration has grown larger than ever, internal migration has been decreasing (OIS, 2019). Figure 2.2 clearly shows this pattern: the blue lines showcase the growing international migration balance, in contrary to the decreasing orange lines that show the internal migration balance.

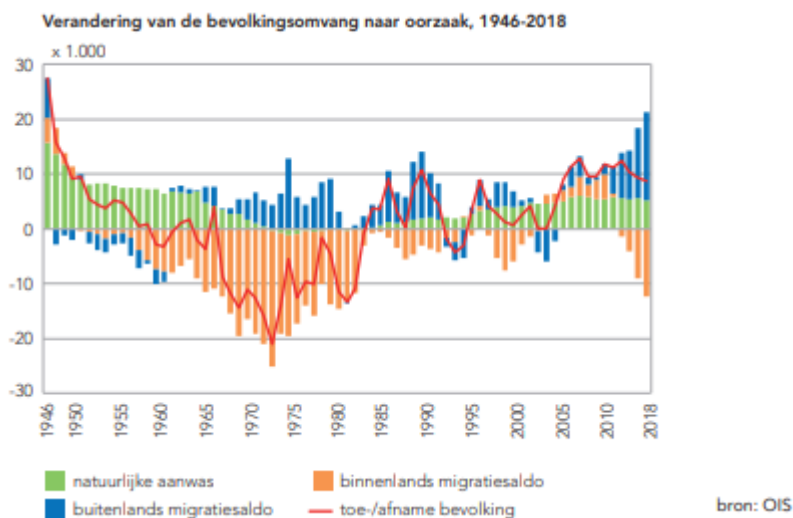


Figure 2.2: Change in population size according to reason, 1946-2018 (OIS, 2019).

Apparently, Amsterdam is particularly interesting for international migrants. To add to this, OIS (2019) found that many of these international migrants move within half a year of the first move to Amsterdam. The reasons for this, as well as second moving destinations of international migrant groups, differ widely. This research analyses subsequent moving patterns of international migrants in Amsterdam, and links these to neighbourhood characteristics within the metropolitan area of the city.

In this Master's Thesis, moving patterns of international migrants in the metropolitan area of Amsterdam are investigated. Particularly, moving patterns after the initial move from abroad to Amsterdam are compared through country of origin of the migrants. Also, some individual- and neighbourhood characteristics are added to enrich the analysis.

Earlier research has been conducted in the field of subsequent location choices of immigrants. Often, this research was focused on economic impacts and economic choices of migration (Abowd & Freeman, 1991; Silvestre & Reher, 2012). However, other research by Silvestre & Reher (2011) and Zorlu & Mulder (2007) has already tried to add socio-demographic characteristics and issues like segregation. This research will try to include both economic- and socio-demographic characteristics of migrants to create a comprehensive image of subsequent migration patterns of international migrants in the metropolitan area of Amsterdam.

Important to note is the use of the term "migration" in this particular research. Many scientific studies make use of certain boundaries to determine a move as "migration": for example, Mulder & Malmberg (2014) only considered moves that exceeded a 50km distance as migration. For this study, any kind of address change is considered migration, regardless of distance.

According to this research plan, the following research question arises:

"How do personal and neighbourhood characteristics influence the subsequent location choice of international migrants after an initial move to Amsterdam?"

Sub questions that will support this research question are:

"What patterns of subsequent migration can be found amongst international migrants in Amsterdam?"

"How do the personal factors age, gender and nationality influence the choice of international migrants in Amsterdam to pursue a subsequent move within the municipality, within metropolitan Amsterdam, within the Netherlands or internationally?"

"How does the presence of co-ethnics influence migration choices of International migrants in Amsterdam?"

"How do subsequent moving patterns of Western international migrants differ from subsequent moving patterns of non-Western international migrants?"

"How do subsequent moving patterns of migrants from India, China, Japan, the United States of America, Canada, Russia and Australia differ from subsequent moving patterns of other international migrants in the municipality of Amsterdam?"

Quantitative data analysis of moving patterns, neighbourhood characteristics and migrant characteristics will allow the researcher to find answers to these research questions. Furthermore, through literature research, a theoretical framework is built that allows for wider interpretation of migrant motivations to move, and their locational decisions. Relevant theories of (subsequent) migration and location choices are widely available. Also, literature on highly skilled migrants and spatial assimilation is ubiquitous. Accordingly, an elaborate theoretical framework including these and other theories is built to create an interpretative scope before conducting the research.

3. Research & Theoretical Background

Some important concepts in this research are *international & internal migration, highly skilled migrants/migration, segregation, spatial assimilation, ethnic enclaves* and *subsequent (internal) migration*. This chapter builds upon previous academic work to construct a theoretical basis for this research.

3.1 Research Background

3.1.1 Migration Research

To find out about subsequent migration motives and characteristics of international migrants, it is important to first look at the overall field of (subsequent) migration research, as this allows for greater understanding of the characteristics of both initial and subsequent migration.

Hagen-Zanker (2008) performed an extensive literature review on why people migrate and adds more recent developments in the field of migration research to the classic work of Massey et al. (1994). Hagen-Zanker (2008) identified migration as “...*the temporary or permanent move of individuals or groups of people from one geographic location to another for various reasons ranging from better employment possibilities to persecution*” (Hagen-Zanker, 2008, pp. 4), which is also the definition that is used in this research. In the 19th century, one of the earlier theories of migration arose by Ravenstein, who used empirical migration data to create his “Laws of Migration”. Even though the bases of some of these laws still hold their ground, newer theories have added much more complexity to the whole of migration theory. Interesting is the shift from aggregate, macro migration data and a large economic focus, to micro data analysis and more focus on personal characteristics. Ravenstein’s laws, Todaro’s income maximization model and Lewis’s model of economic development all used macro data and focused on the economic aspect of international migration. In later years, Hagen-Zanker (2008) shows that migration research has opted more towards micro level theories where personal characteristics are of increased importance.

Even more recently, studies have shown that migration can also be reviewed through a life-course perspective, and the importance of family ties added another branch of migration research. Hagen-Zanker (2008) concludes that most superficially, migration is a decision that depends on the costs versus the benefits of migration. However, these costs and benefits should not just be seen in the economic sense; family, personal characteristics and other sociological factors may be just as important. The scalar level of migration research will also remain dynamic, according to Hagen-Zanker (2008). As migration is clearly a dynamic process, ongoing research remains important to keep up with the status quo.

3.1.2 Migration to the Netherlands

To further elaborate on the context of this research, it is critical to reflect on existing literature on migration patterns in the Netherlands and Amsterdam, especially that of immigrants. Therefore, both historic and current migration patterns are reviewed to create a complete research background.

When considering migration in a historical context, immigration to The Netherlands can be divided into three overlapping waves of international migration (Statistics Netherlands & Dutch Ministry of Justice and Security, 2011). The first large migration wave that The Netherlands experienced was after the Second World War (White, 1993) and consisted mostly of low educated labour migration from Southern Europe, Turkey and North Western Africa (Maghreb). After the economic recession in

the 1970's, the need for cheap labour decreased and thus labour migration reduced, partially due to a decrease in opportunities but also due to stricter migration policies. The second large migration wave consisted mostly of family migration, which was made up of many wives and children related to earlier migrated labour migrants. Lastly, White (1993) speaks of a post-industrial third migration wave, which consists of both highly skilled migrants and refugees. Other large migrant streams to The Netherlands are from former colonies such as Indonesia, Surinam and the Dutch Antilles (Statistics Netherlands, 2011).

According to the Statistics Netherlands (2011), the previously mentioned post-industrial third wave is still happening in The Netherlands. Statistics from more recent years (Statistics Netherlands, 2018) show that international migration to The Netherlands remains both high and stable. Interestingly, relatively less migrants come from Asia and an increasing amount of migrants come from Africa, America and Europe (Statistics Netherlands, 2018).

3.1.3 Migration to Amsterdam

Historically, Amsterdam has been the largest Dutch municipality for centuries (NIDI, 2003). Regardless, the flow of (international) migrants to the city is a more recent trend. Although the municipality of Amsterdam consisted of almost 850.000 inhabitants in the 1950's (NIDI, 2003), massive suburbanization and out migration, especially of Dutch citizens, caused the municipality to shrink in size (CBS, 2017). In 2019, Amsterdam broke through its historical population peak of 872.428 inhabitants, a record that had existed since 1959 (OIS, 2019). Even though an increasing amount of young families and Dutch citizens leave the city, it keeps on growing through a combination of international migration and natural growth (OIS, 2019), which also contributes to the ethnic diversity of the city. The largest international migrant group consists of Indian migrants, followed by American and British migrants (CBS, 2017). Many of these migrants are considered *highly skilled migrants* who come to Amsterdam to study or work (CBS, 2017).

3.1.4 Highly skilled migrants in the Netherlands

Recent reports of the Municipality of Amsterdam (2019) and Statistics Netherlands (2017) show an increasing amount of highly skilled migration to the Netherlands, and particularly to Amsterdam. The two central theories on highly skilled migration according to Koser & Salt (1997), focus on *“the international spatial division of labour and the links between global economic systems of trade, finance and labour exchanges”* (Koser & Salt, 1997, p.289). It should be noted that these and most other theories are based on the economic motivations and impacts of highly skilled migration. Since the past decade, both globally and in The Netherlands, a relative increase of the share of highly skilled migrants compared to other migrant groups arose. Research by Buers et al. (2018) confirms this increase for the Netherlands, which can partly be related to the ‘kennismigrantenregeling’, regulations established in 2004 that allow for a more convenient procedure of highly skilled migrants’ entrance to the Netherlands (Buers et al., 2018). Within the Netherlands, a large scale research by the ministry of economic affairs has been conducted in 2010, where large groups of highly skilled migrants were interviewed and surveyed on several topics. First and foremost, highly skilled migrants are an incredibly heterogeneous groups. Some move because of labour opportunities in a specific country; others move because their foreign employer coincidentally sent them there. The definition of highly skilled migrants also varies. For the official regulations of the ‘kennismigrantenregeling’, an income threshold and working criteria are linked to the formal label of highly skilled migrant (Buers et al., 2018).

The ministry of economic affairs (2010) however considers every highly educated migrant, which they classify as migrants with at least a college degree, as a highly skilled migrant. This ministry also mentions income, career and social network as the most important factors that attract highly skilled migrants. Interesting to see is that both Berkhout et al. (2010) and Buers et al. (2018) show that the environment (nature, cities, sights) is one of the most attractive aspects of the Netherlands for highly skilled migrants. In the contrary, accommodation and procedures to gain proper living space are rated as the biggest problems in the research by Buers et al. (2018). The combination of these opposites might be an indicator of the subsequent migration that many highly skilled migrants undergo.

Several sources (CBS, 2017; Buers et al., 2018; Berkhout et al., 2010) mention the main countries where highly skilled migrants in the Netherlands come from. Between 2010 and 2018, most highly skilled migrants originated from India, China, Japan, the United States of America, Canada, Russia and Australia. Many of these highly skilled migrants work in the main agglomeration of Dutch cities, “de Randstad”, and most of them have jobs in the ICT-, Engineering- or economic sector (Berkhout et al., 2010). Sometimes a temporary place to stay is offered by the employer of the highly skilled migrants, but this is not always the case (Buers et al., 2018).

3.1.5 Location choices of immigrants’ subsequent internal migration

Previous research on subsequent internal migration and location choices of immigrants is scarce; most studies either investigate the initial settlement, or the subsequent move, but little analysis has covered both moves. Regardless, figures of subsequent migration in the United States by Zhang (2006) show the relevance of research hereof. Between 1985 and 1990, more than half of the Asian migrants had changed residence address, of whom 40 percent even moved between states. Though at slightly lower rates, almost 50 percent of all Hispanic migrants also changed residence in this time frame. These are far higher than the migration rates of non-Hispanic whites and black populations. Connected to these patterns, the research of subsequent migration of international migrants is most elaborate in the Northern American context.

The scarcity of subsequent migration research is in contrast with the high mobility that recent international migrants show: after an initial move towards the Netherlands, international migrants remain relatively mobile compared to the Dutch population (20% perform a subsequent move over 8% of the Dutch population), shown in research by Zorlu & Mulder (2006). Zorlu & Mulder (2006) analysed initial and subsequent location choices of immigrants to the Netherlands and showed that initial location choices of immigrants seem to correlate strongly and negatively with neighbourhood house prices. More generalizable are the findings on location choice and neighbourhood population by Zorlu & Mulder (2006); They found that initial location choices of immigrants are mostly determined by the size of neighbourhood population that belongs to the same minority as the immigrant.

Interestingly, immigrants from non-Western countries seem to move into more segregated neighbourhoods, which is especially strong in the four biggest Dutch cities, including Amsterdam. Western immigrants, like UK and American immigrants, seem less likely to move into more segregated neighbourhoods after an initial move. Similar to the analysis of Zorlu & Mulder (2006), Simpson & Finney (2009) reviewed the internal migration of ethnic groups in Britain. In contrast to what Zorlu & Mulder (2006) found, Simpson & Finney (2009) noticed that all groups under study,

with the exception of Chinese migrants, have been migrating out of minority ethnic concentrations; counter urbanisation patterns found in the United Kingdom were higher for minority groups than for the native White population.

Even within ethnic minority groups, Simpson & Finney (2009) found differences: where most Chinese migrants make subsequent moves towards Chinese concentrations, Chinese student immigration patterns show the contrary of this pattern. This might indicate that highly skilled migrants exhibit different migration behaviour, even from their own ethnic group (Simpson & Finney, 2009).

Another example of research on initial and subsequent location choices of immigrants is an article written by Aslund (2004), which focuses on the case of Sweden. His research addresses three main issues; First, Aslund (2004) considers regional factors that have an impact on people's decisions on where to stay. Then, he tests if these factors seem to change between the initial and subsequent location choice. Lastly, Aslund (2004) checks if these factors and changes in behaviour differ between immigrants and native inhabitants. His findings correspond with those of Zorlu & Mulder (2006), where immigrants seem to make subsequent moves towards people from their country of birth, and in general to large immigrant populations.

In Northern America, some more research has been conducted on factors that seem to influence migrants' subsequent migration decisions. Zavodny (1997 & 1999) analysed both the determinants of locational choices of immigrants and the link to welfare. Once again, the migrants' level of education is shown to be an important factor in their subsequent location choice; highly skilled migrants' locations become more dispersed, the longer they live in the United States of America. Yet again, in this research other foreign-born citizens remain the biggest factor associated with subsequent location choices of immigrants in the United States. Also here, however, both educational level and whether migrants moved for employment makes that these migrants are less likely to be influenced by the presence of other migrants in their subsequent location choice. These findings almost perfectly match the results of Bartel (1989), who concludes that immigrants are more geographically concentrated and display more (subsequent) migration than U.S. natives. To add to this, Bartel (1989) found that higher education and employment both decrease the likelihood of international migrants to move to neighbourhoods with high migrant concentrations, and increase the likelihood of making a subsequent move after arrival in the United States.

More recently, Newbold (2017) performed a study in Canada, where the Longitudinal Survey of Immigrants to Canada (LSIC) provided new data that tracks migrants exceptionally well, as it is longitudinal and thus follows the same migrants over a longer span of time. Newbold (2017) explains why migrants location choices are more dynamic than solely census observations through three settlement patterns: *Intended settlement choice*, *Initial settlement choice* and *Established settlement*. For recent arrivals and subsequent movement, the first two stages are especially interesting. The reasons of change in intended, initial and established settlement that Newbold (2017) found were different from any of the previously mentioned researches. Newbold (2017) argues how this is likely related to the extensive questionnaire that is added to the survey, which allows for elaboration on what would be similar to census data. Newbold (2017) shows that many of the subsequent moves are associated with physical properties of house and household: having more privacy, the need for more space, more independence and better quality housing were reasons that had been mentioned often in the survey.

3.2 Theoretical Framework

The research background shows a large variety of characteristics and motives of international migrants' subsequent location choice. Accordingly, there is no one common theory that fully explains research of subsequent migration. However, a combination of theory on highly skilled migrants, spatial assimilation theories, ethnic enclaves and the life course approach to migration form a basis that can explain many parts of the subsequent migration behavior that international migrants pursue.

3.2.1 Highly skilled migrants

Some research has already been done on experiences, personal motives and locational choices of highly-skilled migrants. For instance, Harvey & Beaverstock (2016) looked into experiences of highly-skilled British migrants in Asia and Northern America. Interesting are the large locational differences in highly-skilled migrant experiences. In Singapore, Harvey & Beaverstock (2016) found that many of the British migrants lived in separated, high income condominiums where other European, American and Oceanian economic migrants resided. In contrast to this, the British migrants in both Vancouver and Boston had very little contact with other British migrants and tried to assimilate to the local culture. Other research of British migrants in non-Western places like Dubai (Walsh, 2006) confirms this finding, where the British would be more active in migrant communities and clubs in the non-Western context. Interestingly, Scott (2007) found that British migrants in Paris were relatively active in associating with other highly skilled migrant groups. Harvey & Beaverstock (2016) note that it could be the linguistic or cultural dissimilarities that cause these cases of separation or assimilation; the Western highly skilled migrants in Singapore and Dubai might feel less associated with the native population and are more in touch with other highly skilled migrants, whereas Western highly skilled migrants in Vancouver and Boston share both the language and culture with the native population, which causes them to assimilate more.

In the case of highly skilled migrants in Amsterdam, the research of Harvey & Beaverstock provides an interesting framework. On the one hand, it could be expected that the highly skilled migrants would show low spatial segregation from the native Dutch population, as they are often familiar with Western culture. However, cultural and especially linguistic differences remain, and association with other (highly skilled) migrant groups like Scott (2007) found in Paris could also occur.

3.2.2 Spatial Assimilation Theory

Spatial assimilation theory describes a relationship between minority groups, socioeconomic status and moving patterns, originating from the Chicago School (Park, 1925) and further elaborated upon in work of Massey & Denton (1985). In essence, the theory argues that an increase in the socioeconomic status of minority groups leads these groups to move to neighbourhoods that consist more of majority members. The work of Massey & Denton (1985) explains how the message in this theory is the implicit 'meaning' of where one lives; minority neighbourhoods are often linked to lower socioeconomic status, which includes factors like education, healthcare, job possibilities and so on. When the socioeconomic status of a minority individual rises, he/she will want to improve the conditions of living too, which is often linked to moving to a neighbourhood with a higher amount of majority members. This association logically links back to highly skilled migrants, as these are often individuals with a higher socioeconomic status.

In their original study, Massey & Denton (1985) used a combination of macro level census data and micro level analyses derived from a survey. The overall results confirm the spatial assimilation theory; as the socioeconomic status of minority members rise, the probability of moving to majority members rise as well. Accordingly, this increase in socioeconomic status of minority members also lowers the probability of moving to minority members. The notion of “race” and separating minority groups on the basis of this notion is shown to be important. Massey & Denton (1985) found large differences in spatial mobility behaviour shown by blacks compared to other ethnic minorities, which seemed to continue regardless of changes in socioeconomic status. This finding also implies that spatial assimilation does not consist solely of minority behaviour, socioeconomic status of minorities and choice, but is also influenced by racial barriers.

More recent work on the spatial assimilation theory was conducted by Wessel et al. (2017) in the context of Scandinavian capitals. Similar to the work of Massey & Denton (1985), samples of the complete population were used through the period of 2000-2008 and categorized in broad immigrant categories. Just like the research by Massey & Denton (1985), spatial mobility (which tests the spatial assimilation hypothesis) was restricted to relocation across neighbourhoods, as opposed to looking at larger distance migration. The results found by Wessel et al. (2017) differ quite a bit from the results found by Massey & Denton (1985). Only weak differences in upward spatial mobility are found amongst minority groups that increase their socioeconomic status and other minority groups, and moves upward in the sociospatial hierarchy do not necessarily correlate with lower distance to the majority groups. These results may differ due to varying reasons; both the time that the research was conducted (80's and 00's-10's), as well as the context in terms of countries, (USA vs. Scandinavia) subjects of research (Hispanic / Black immigrants vs. all immigrants in Scandinavia) and welfare climate (individualistic vs. welfare state) may impact the results.

In terms of this research, it is likely that the context in terms of migrant groups, welfare state and status quo (data from the 2010's) is more comparable to the situation of Wessel et al. (2017) than that of Massey & Denton (1985). This also impacts the hypotheses that will be used to test the spatial assimilation theory. The patterns that both Massey & Denton (1985) and Wessel et al. (2017) describe should be seen in the context of this research as well; both studies argue that immigrants will initially reside in low-status neighbourhoods, often in the inner city, and later move to “higher quality” neighbourhoods with a native majority.

The use of either spatial mobility or migration as unit of analysis differs per study on spatial assimilation. Some studies only focus on spatial mobility (e.g. Wessel et al., 2017), where small neighbourhood moves are investigated. Other studies of spatial assimilation theory focus on migration, which is often moves over 50 kilometres. This research makes use of all types of migration, both moves within the neighbourhood and international subsequent migration. However, when analysing spatial assimilation, the research is limited to the municipality of Amsterdam.

As this research will apply the spatial assimilation theory to the Dutch context, it is essential to look at studies on spatial assimilation that have been conducted in the Netherlands. Bolt & van Kempen (2010), as opposed to much other spatial assimilation research, focused on the neighbourhood level and thus residential mobility.

To allow an overtime comparison of two housing surveys in the Netherlands in 2002 and 2006, Bolt & van Kempen (2010) created four large categories of migrants in the four largest Dutch cities. This categorization is based on migration history of these groups and categorized as following, with a group of native Dutch citizens as reference category;

1. Turkish & Moroccan migrants (history as labour migrants with little return migration)
2. Surinamese & Antillean migrants (history as former Dutch colony & fluent in Dutch language)
3. “Western” residents (Europeans, US, Japanese, Australian and New Zealanders)
4. Non-Western residents (the remainder of migrants)

The dependent variable in the analysis is the residential mobility of an individual; does this person not move, move to a neighbourhood with a minority concentration (minority population $\geq 40\%$) or move to a neighbourhood with a majority concentration (minority population $\leq 40\%$). Bolt & van Kempen (2010) found that, apart from some ethnic differences, educational level, income and household type have a significant effect on locational choices of certain minority groups. In general, Dutch citizens move out of minority concentrations more often than ethnic groups. This conclusion holds even when controlling for individual variables like income, education, household type and age. However, Bolt & van Kempen (2010) note that even when controlling for these individual variables, differences in spatial assimilation between ethnic groups did not disappear. This implies that spatial assimilation may not be as simple as minority groups moving towards majority neighborhoods with increasing socioeconomic status; perhaps other theories would explain these differences between residential mobility of ethnic groups. Bolt & van Kempen (2010) mention two other possible theories, ethnic enclaves (further explained in chapter 3.2.3) and the place stratification model. The place stratification model holds similar hypotheses to the spatial assimilation model, but mentions the importance of structural constraints for neighborhood outcomes: even when native and migrant households have the same locational preferences, the place stratification model stresses how structural constraints withhold the migrant households from realizing these similar preferences (Lersch, 2012). The findings of Bolt & van Kempen (2010) do not specifically point to either of the two alternative theories, but both of these theories offer a different interpretation of the results.

Similar results to the study of Bolt & van Kempen (2010) were found by Schaake et al. (2014), who tested theories of spatial assimilation, place stratification and ethnic enclaves through the same Dutch housing survey that was used in the research of Bolt & van Kempen (2010). Instead of using a threshold for defining minority- or majority neighborhoods, Schaake et al. (2014) used a continuous variable to define “concentration”, which allows for more precise analysis than an arbitrary threshold. Also, Schaake et al. (2014) created an ethnic hierarchy variable to control for stigmatization that minorities may experience. Their results are similar to those of Bolt & van Kempen (2010): generally, the spatial assimilation theory can be confirmed. Both Turkish/Moroccan migrants and Caribbean migrants are less inclined to move to majority neighborhoods than Dutch natives. However, when controlling for education and income, which can be seen as socioeconomic status, this lesser inclination decreases, which conforms with the spatial assimilation theory. Interesting is that the addition of the stigmatization variable shows that Caribbean migrants, who are less stigmatized in the Dutch society than Turkish/Moroccan migrants, show more spatial assimilation.

One of the main differences between the previous two studies and this research is the status of the migrants. In the studies by both Bolt & van Kempen (2010) and Schaake et al. (2014), the analyzed migrant groups had not necessarily recently migrated to the Netherlands. More fitting with this perspective is the study of Zorlu & Mulder (2007), who analyzed patterns of spatial assimilation for recently settled migrants. In accordance with the research background of this study, Zorlu & Mulder (2007) also found that immigrants are especially mobile during the first year of arrival. The analysis of Zorlu & Mulder (2007) shows that remigration towards equally segregated neighborhoods was strongest in the four largest cities of the Netherlands, including Amsterdam.

These subsequent migration patterns differed among the analyzed migrant groups like asylum migrants, family migrants and students. The general findings Zorlu & Mulder (2007) confirm the main hypotheses of the spatial assimilation, but show some differences between moving patterns of specific ethnic migrant groups. Especially migrants who share parts of their culture, language and socioeconomic position with the native population seem to exhibit more spatial assimilation behavior than migrants who are more different from the native Dutch population.

As this research focuses on the metropolitan region of Amsterdam, literature on spatial assimilation and segregation in this region is especially interesting. Musterd (2003) is one of the few researchers who wrote specifically on segregation in Amsterdam. Here, Musterd (2003) mentions how regional wage differences in the Netherlands are relatively small, which makes the possible relation between ethnic segregation and socioeconomic status questionable in the Amsterdam context. This also means that findings concerning the spatial assimilation theory should be properly interpreted through this context. Patterns found in the research of Musterd (2003) do align with findings of Zorlu & Mulder (2007); though Turks, Moroccans and Surinamese exhibit similar levels of segregation, Turks and Moroccans seem less integrated in the Dutch society. However, these ethnic differences decrease for second- and third-generation immigrants. Similarly, Turkish and Moroccan migrants seem to cluster more than other migrant groups, but this pattern also decreases for second- and third-generation immigrants. Concludingly, some patterns in segregation and spatial assimilation occur in Amsterdam, but due to the differences between migrant groups and generations, no clear substantiation for the spatial assimilation theory could be found by Musterd (2003).

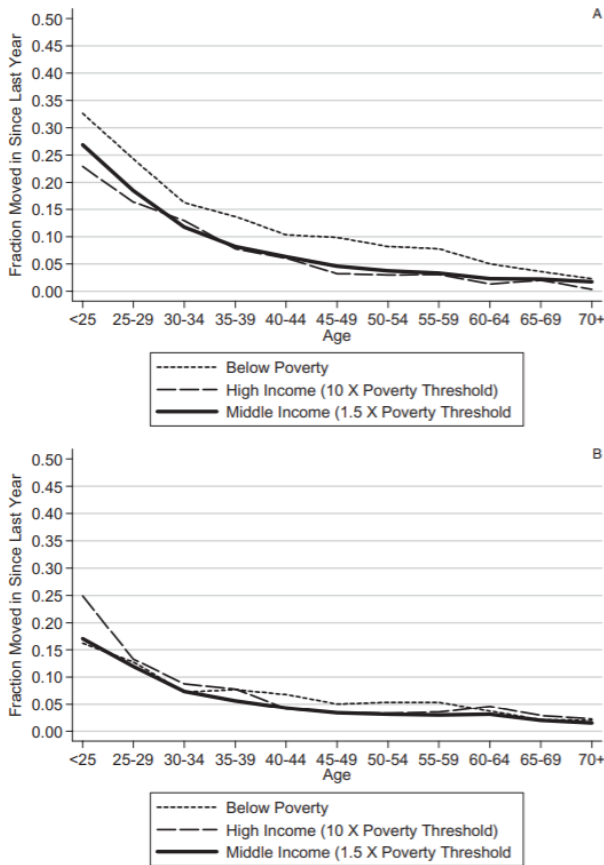
3.2.3 Ethnic enclaves

Although ethnic enclaves do not provide a theoretical scope like the spatial assimilation theory does, it is still important to touch upon the concept as it might explain some of the subsequent migration patterns found in this research. Lim et al. (2017) provide a definition of ethnic enclaves that can be used in migration research too: "An ethnic enclave is a geographical area where a particular ethnic group is spatially clustered and socially and economically distinct from the majority group" (Lim et al., 2017, pp.1). Many economic geographers have researched ethnic enclaves and the economic consequences of such clusters (Edin et al., 2003; Borjas, 2000; Sleutjes et al., 2018), but the use of this theory in migration analyses is limited. Even recent research on ethnic enclaves focuses mostly on the outcome of ethnic enclaves (Eriksson, 2018; McCoy, 2019), yet little can be found on the reasoning behind ethnic enclaves, as well as possible hypotheses or thresholds to define ethnic enclaves. Though the existence of ethnic enclaves may seem logical, scientific explanations of such enclaves lack. Hainmueller et al. (2020) are one of the first researchers to analyze economic integration, integration policies and the effect hereof on ethnic enclaves.

The results of Hainmueller et al. (2020) show a convincingly positive side of ethnic enclaves: migrants who locate near conationals have a higher chance of entering the labor market, and this effect is especially strong in the first year(s) of arrival. Also, migrants that are employed by the same company are often from the same ethnic background, or have a common language. Another study that explains the concept of ethnic enclaves is conducted by Schaake et al. (2014), who claim that some migrant groups may move towards each other simply because they like living close to each other. Concludingly, almost all migrant groups tend to move in with conationals, especially in the first few years of arrival. Likewise, the theories behind ethnic enclaves can explain a part of subsequent migration when patterns hereof show that recently arrived migrants are likely to make a subsequent move towards similar minority neighborhoods.

3.2.4 Migration in the life course; Migration & age

An important independent variable in many bodies of migration research is “age”. Two main bodies of literature concerning age and migration can be found: the more recent life course migration perspective, and migration & age. The life course perspective is increasingly acknowledged in the worldwide literature of both migration and residential mobility (de jong & de Valk, 2020; Geist & McManus, 2008; Bailey, 2009; Coulter et al., 2016) and stresses how individual lives are far from independent; rather, individual lives are deeply rooted into networks both with other people and many other factors, extending both over space and time (de Jong & de Valk, 2020). Although the life course perspective consists of numerous aspects, age is an important one. Geist & McManus (2008) show a curvilinear function for both residential mobility, defined as a move within the same county, and migration, defined as a move across state/county lines. Although divided into three separate lines on the basis of income, Figure 3.1 still properly showcases the average mobility of individuals per age category for both residential mobility and migration. As our data do not allow to identify



income class for individuals, this variable cannot be used in this research. Regardless, the general trends found by Geist & McManus (2008) provide a clear theoretical base to create expectations for subsequent migration patterns and age categories. The curvilinear function of both Figure A (residential mobility) and Figure B (migration) show that both residential mobility and migration decrease with age. The relation is mostly curvilinear: young people (<25) are most mobile, both in terms of migration and residential mobility. This mobility decreases rather steeply until the age of 40, after which the mobility still decreases, but at a lower rate.

A small bump in migration is visible around the age of 60-65, which is often linked to retirement migration and health reasons (Woodrey & Chandler, 1997; Millington, 2000), but other than that both types of mobility continue to decrease slightly.

Figure 3.1: Residential Mobility & Migration per age category, Geist & McManus (2008)

The findings of Geist & McManus (2008) are in accordance with other literature concerning migration and age (Millington, 2000; Lundborg, 1991), stating that geographical mobility generally decreases with age. In his classical work on human capital, Becker (1964) explains this correlation between age and the likelihood of migration. Becker (1964) argues that as people get older, they are more and more rooted through family ties, employment and local ties, which makes migration less attractive.

This argument still stands and also supports the small bump when the employment ties release around retirement age. However, as this research looks at subsequent migration, the relationship between age and migration might not be as easily explained, since all migrants in the database have already made a move in the same year. Little research can be found on the relation between age and subsequent migration; for now, it is assumed that a weaker curvilinear relation similar to the one of Geist & McManus (2008) will be found between age and subsequent migration.

3.2.5 Migration in the life course; Family migration

Of course, independent variables that influence subsequent migration decisions cannot be seen in a vacuum. The previously mentioned age is an important aspect of the life course and influences migration behaviour, but other possible factors that may influence subsequent migration should always be considered as well. Following this, another important aspect of migration, especially through the life course perspective, is family. Geographical mobility and family interact in many ways; for example, one can assume that parents with children are less mobile since more family members have ties in terms of school, employment and social ties. Important to note is that this research has a lack of data to allow analysis of the relation between subsequent migration of international migrants and family. However, this analysis of theory on family and migration does allow for some interpretation of results.

Although the most obvious, children are not the only family tie that might impact migration. Ermisch & Mulder (2018) recently published a study on ties to parents and the likelihood of moving longer distances. Their findings show a strong association between the likelihood of migration and the distance of parents, which is weaker when the parents and children have little contact. In this research, it is unlikely that many migrants will have their parents nearby, as they just made an international move to the Netherlands. Likewise, high subsequent mobility of international migrants may partially be linked to the lack of parents nearby.

Interesting to note about family migration is how most patterns can be related to life events that often take place at certain ages. Geist & McManus (2008) show how peak residential mobility for family-reasons is in the mid 20's for most people, which is likely related to first marriages and cohabitations. Moreover, a higher residential mobility for married parents than for singles before the age 30 can be linked to family growth. Also, the high mobility of singles in their 30's can likely be linked to union (dis)solution. Geist & McManus (2008) also found an enormous increase in the share of family-based moves for singles, accounting to over half of all local family-motivated moves from the age of 40 and on. This can be associated to divorce/separation, but also moving to children or parents.

The research- and theoretical background show how many different factors might influence subsequent location choices of international migrants in Amsterdam. Theories like the spatial assimilation theory, place stratification theory and ethnic enclaves may provide a theoretical scope to explain patterns found in this subsequent migration. In the following chapters, the base datasets and methods to test hypotheses based on these theories will be elaborated upon.

3.3 Hypotheses

3.3.1 Hypotheses analysis 1

The first analysis of this research will consider subsequent migration patterns of international migrants in Amsterdam. The following hypotheses are considered for this analysis:

Hypothesis 1.1: International migrants in Amsterdam are more mobile than the native Dutch population.

Research has often shown that international migrants are more mobile than the native population. This hypothesis makes use of subsequent migration patterns of international migrants in Amsterdam and the overall migration of the Dutch population to test if these international migrants are indeed more mobile.

Hypothesis 1.2: Male international migrants perform more subsequent migration than females.

Traditionally, migration has been a male dominated field. Females were often portrayed as tied movers who would not deliberately choose to migrate. Though this discourse has changed in the past years, it is still interesting to see how subsequent migration patterns differ by gender.

Hypothesis 1.3: International migrants perform less subsequent migration as age increases.

In the theoretical framework, the negative relation with age and risk of migration was shown. Following this, it can be expected that international migrants perform less subsequent migration as age increases.

Hypothesis 1.4: Non-Western international migrants' subsequent migration mostly happens in the municipality of Amsterdam, whereas Western international migrants perform more subsequent moves towards metropolitan Amsterdam and the rest of the Netherlands.

As shown in the theoretical framework, migrants who share more similarities to the native population in aspects like culture and language often show different patterns of migration than migrants who share less similarities. Amsterdam is culturally very diverse and houses people from many different countries, whereas most other places both in metropolitan Amsterdam and the rest of the Netherlands are less diverse. Likewise, it can be assumed that non-Western migrants, who are less familiar to Dutch language and culture, will perform subsequent migration in the area of Amsterdam where both co-ethnics and people from other cultures reside, whereas Western migrants might be more inclined to perform subsequent moves outside of this area.

3.3.2 Hypotheses analysis 2

The second analysis of this research elaborates on the subsequent migration of international migrants within the municipality of Amsterdam. This analysis will also test theories of spatial assimilation and ethnic enclaves. The following hypotheses are considered for this analysis:

Hypothesis 2.1: Western international migrants are more likely to move to “native” neighborhoods than non-Western international migrants

Other theories concerning spatial assimilation have shown how closeness of the non-native group to the native population in terms of (mainly) language and culture lead to spatial assimilation. This way, it can be expected that Western international migrants, who are closer to the native Dutch population mostly in terms of culture, are more likely to pursue subsequent moves towards “native” neighborhoods.

Hypothesis 2.2: Non-Western international migrants are more likely to move to “segregated” neighborhoods than Western international migrants

Though this hypothesis may seem similar to hypothesis 2.1, due to the three possible outcomes of the subsequent migration (native; mixed; segregated) this hypothesis is not necessarily supported if hypothesis 2.1 is also supported. In this research, a “segregated” neighborhood consists of a significantly higher % of non-native inhabitants than “mixed” or “native” neighborhoods. Following theories of both spatial assimilation and ethnic enclaves, it is likely that non-Western international migrants are more likely to move to “segregated” neighborhoods than non-Western international migrants.

Hypothesis 2.3: Highly skilled migrants are more likely to move to “native” neighborhoods than other international migrants

Earlier research shows that highly skilled migrants in Singapore and Boston often moved to neighborhoods where many affluent natives reside. Similar to the division Western vs. non-Western, there is no one definition for highly skilled migrants. As the data provided for this research do not allow for selections based on education or income, countries where most highly skilled migrants come from are used as a proxy for determining who are highly skilled migrants. This means that in this analysis, “highly skilled migrants” is a shorthand term for migrants from these particular countries.

4 Data

4.1 Basis databases

The main datasets that are used in this research are registrations of the Personal Records Database (Basisregistratie Personen / BRP). The BRP contains personal information of both inhabitants of the Netherlands and inhabitants who left the Netherlands. As this database contains information that can be deducted to individuals, it is only accessible for organizations with either a public or societal task (Rijksoverheid, 2020). This database is a form of register data.

The data used in this thesis concern settlement, municipal moves and departure of people in the municipality of Amsterdam in 2013 and 2014. These are yearly data on all individuals who moved, separately for out-migration, in-migration and internal (within the city) migration. *Table 4.1*, *Table 4.2* & *Table 4.3* list a selection of the variables in all three of the datasets that are used as the basis for this research. Due to the large number of cases (~77.500 in *settlement2013*) and variables (~70 in *settlement2013*, including few empty variables) in the datasets, only some of the variables are shown, more specifically variables that are of interest for this research.

Table 4.1: Selected variables in the 2013 dataset on in-migration (“vestiging2013”)

Variable	# unique values & categories (if applicable)
Year of processing	1 unique value; 2013.
Gender	3 unique values; M (Male), O (Unknown), V (Female)
Country of birth	1002 unique values; string codes e.g. 0363, 0917.
Place of birth	11998 unique values; both string codes (e.g. 0481) and names (e.g. Córdoba, North Sydney).
‘Group’ of origin (on basis of Statistics Netherlands categories)	7 unique values: 1 through 8, excluding 5.
Model classification of the bevcbs value	252 unique values; numerical codes.
Code of nationality or double nationality combinations	166 unique values; numerical codes. These codes can be both single nationalities (e.g. French) and double nationalities (e.g. Dutch & French)
Date of settlement in the municipality	653 unique values; dates in YYYY/MM/DD format.
Date of settlement on current address	615 unique values; dates in YYYY/MM/DD
Date of settlement in the Netherlands	4909 unique values; dates in YYYY/MM/DD

Civil state	7 unique values: 1 through 7
Age	101 unique values, range [0,101]
Code of country of birth of parent 1/2	461 and 447 unique values, respectively; numerical codes as country codes
Postal code after mutation	13359 unique values, all postal codes.
Code of previous municipality / land of immigration	562 unique values, codes that indicate either municipalities or countries of immigration

These variables provide information about countries of origin, previous places where the migrants lived, current addresses and some individual data. By dropping data of individuals where the date of settlement on current address is not equal to the settlement date in the Netherlands, it is ensured that all remaining cases are individuals whose move to Amsterdam was also their initial move to the Netherlands. To further elaborate on subsequent internal migration of these individuals, a second dataset is used. This is the dataset on out-migration (“*vertrek2013*”), which has data on the postal codes both before and after moving (or country codes in case of subsequent international migration). The codes that showcase subsequent internal/international migration from this dataset are visible in *Table 4.2*.

Table 4.2: Unique variables in the 2013 dataset on out-migration

Variable	# unique values / categories (if applicable)
Postal code before mutation	13.536 unique values; postal codes
Code of next municipality of settlement	379 unique values; numerical codes that signify Dutch municipalities
Code of the country of emigration	172 unique values; numerical codes that signify country codes (“.” For missing values, where the destination of the individual is unknown / not registered)

By combining the data on in- and out-migration in 2013, all initial moves to Amsterdam and subsequent moves out of Amsterdam in 2013 can be analyzed. However, the merge of these two datasets does not contain all the information that is needed to analyze subsequent migration exhibited by international migrants in metropolitan Amsterdam, as the merge of these datasets only contains subsequent moves out of the municipality of Amsterdam, to a different Dutch municipality or a subsequent international move. In order to get a complete image of subsequent migration, a third dataset on the internal migration of 2013 in Amsterdam is used. This dataset contains all moves within the municipality of Amsterdam in 2013. *Table 4.3* showcases the two most important variables in this dataset that allow for analyses on the neighborhood where the migrant moved from and moved to.

Table 4.3: Unique variables in the 2013 dataset on internal migration

Variable	# unique values / categories (if applicable)
Code for 1 of 22 areas where this individual lived <i>before</i> the mutation	23 unique values; codes that refer to a certain area in the municipality of Amsterdam
Code for 1 of 22 areas where this individual lived <i>after</i> the mutation	23 unique values; codes that refer to a certain area in the municipality of Amsterdam

First, all three datasets have been prepared for analysis by ensuring that the dataset only contains cases of international migrants who just arrived in the Netherlands and clearing any unnecessary variables. Then, by merging these three datasets using a key variable with unique numbers for each individual, one large dataset was created that forms the basis of the first analysis of this research. After this filtering and merging, the dataset contains a total of 15.496 international migrants that moved to Amsterdam in 2013.

This first analysis also makes use of a categorization of “Western” and “non-Western” international migrants. How countries can best be classified in either category is up for debate, but work of Huntington (1996) provides a good approximation for this categorization. According to him, “Western” countries are the United States of America, Canada, Greenland, Australia, New-Zealand, Western Europe and some parts of Northern-, Southern- and Eastern Europe. Using this distinction, a new dependent variable for analysis is created on the basis of nationality where 0 = Western and 1 = non-Western.

For the second analysis, a different dataset has been created, which is also based on register data (BRP) of the municipality of Amsterdam. This analysis tests patterns of spatial assimilation, ethnic enclaves and life course migration through subsequent migration of international migrants in Amsterdam. Contrary to the first analysis, this second analysis only uses subsequent migrations within the municipality of Amsterdam, leaving out any subsequent migration outside of this area. This way, theories of spatial assimilation can be tested through a combination of register data and larger scale neighborhood data of Amsterdam.

The dataset used for this analysis consists of a merge of data on the in-migration in 2013 and internal migration in 2013 and 2014. The data on in-migration in 2013 are used as base datafile to ensure that all movements recorded in the internal migration data are indeed subsequent migration after settling in Amsterdam in 2013. Because the internal migration data on 2013 do not include sufficient cases of international migrants that pursued a subsequent move within the municipality of Amsterdam to allow analyses including selections of certain nationalities, the data on internal migration in 2014 have also been added. This combination of data contains about 3.500 unique cases of subsequent migration within the municipality of Amsterdam, which is adequate to perform the analyses as described in the Methods section. This second combined dataset has also been selected to only contain the first subsequent move per person as to exclude individuals who performed several subsequent moves within the municipality of Amsterdam in 2013 and 2014.

This second analysis makes use of a categorization of highly skilled international migrants and other international migrants. Due to the lack of data on educational level or income, there are no determinants that can surely indicate whether an international migrant falls into the category of highly skilled migrant. Following this lack of individual data, nationality is used as proxy for highly skilled migrants. According to several sources (CBS, 2017; Buers et al., 2018; Berkhout et al., 2010) the main countries of origin of highly skilled migrants in The Netherlands are India, China, Japan, the United States of America, Canada, Russia and Australia. After identifying the migrants from these countries in the database, a distinction between highly skilled and not highly skilled international migrants is created.

4.2 Additional Data

Additional data for the second analysis are based on data of the municipality of Amsterdam. The main database used is the “Basisbestand gebieden Amsterdam” (BBGA; base file areas Amsterdam) by the municipality of Amsterdam, which is freely accessible. These BBGA data are a combination of data created by the OIS department of the municipality of Amsterdam and data created by Statistics Netherlands. To allow for analysis on spatial assimilation and ethnic enclaves, the BBGA data concerning the % of people with a Dutch migration background living in Amsterdam for each of the 22 areas are used. The exact use of this data is also further elaborated upon in the Methods section.

5. Methods

The main research question in this study is “How do personal and neighbourhood characteristics influence the subsequent location choice of international migrants after an initial move to Amsterdam?”. Two main analyses are conducted to address parts of this main research question. The first analysis is a larger scope analysis that focuses on all international migrants that arrived in Amsterdam in 2013 and performed a subsequent move in this same year. Here, all subsequent moves of these migrants will be analysed. To be able to test the theoretical framework, a second analysis is conducted, which focuses on subsequent migration only within the municipality of Amsterdam. This analysis will allow for deeper analyses of theories of ethnic enclaves and spatial assimilation.

5.1 Analysis 1: Subsequent migration from Amsterdam

For analysis 1, all subsequent moves of migrants who arrived in the municipality of Amsterdam in 2013 are investigated to properly assess subsequent location choice. In this case, the appropriate dependent variable for analysis is the *subsequent location choice of international migrants after an initial move to Amsterdam*. This dependent variable is a categorical binary variable, differentiated in subsequent location choice and consisting of 5 categories, visible in *Table 5.1*.

Table 5.1: description of dependent variable “subsequent moving pattern of international migrant” (mov_patt)

Category of dependent variable <i>mov_patt</i>	meaning
0	No subsequent move (reference category)
1	Subsequent move within municipality of A'dam
2	Subsequent move within metropolitan A'dam
3	Subsequent move within the Netherlands
4	Subsequent international move

This analysis will consist of a multinomial logistic regression. The formula of a standard multinomial logistic regression looks as following:

$$\ln(Y_i) = B_0 + B_1X_i + B_2x_{2i} + B_3x_{3i} + B_nX_{ni} \dots + e_i$$

Here, $\ln(Y_i)$ is the logarithm of the dependent variable, which in this case is the probability of belonging to a certain category of movers divided by the probability of being in the reference category ‘no subsequent move’. B_x is the slope coefficient, X is the independent variable and e_i is the random error term.

Likewise, the formula of this analysis would look like:

$$\ln(\text{mov_patt}) = B_0 + B_1(\text{age or age cat.}) + B_2(\text{gender}) + B_3(\text{nationality category}) + e_i$$

The definitions of nationality categorizations depend on the desired analysis outcome. For example, when analyzing the subsequent moving patterns of Western vs. non Western international migrants, it would look like $B_3(\text{dummy})$, where 0 = Western (ref cat.) & 1 = non Western). Age is also used in several ways: as a ratio variable together with a separate variable for age^2 and as a dummy variable through age categories, divided into 18-24 (ref. category), 25-34, 35-44, 45-54 and 55+.

To test the hypotheses related to analysis 1, a multinomial logistic regression is ran. The formula for this analysis looks as follows:

$$\text{Ln}(\text{mov_patt}) = B0 + \text{age_cat} + \text{gslcha} + \text{natiob_western} + ei$$

In this analysis, *mov_patt* is coded as described in *Table 4*. The independent variable *age_cat* is age divided into categories of 10 years, with 18-24 as reference category and 55+ as oldest age group. The second independent variable is gender (*gslcha*) which is divided into male (reference category) and female. Lastly, the independent variable that defines nationality (*natiob_western*) is divided into Western migrants (reference category) and non-Western migrants.

5.2 Analysis 2: Subsequent migration and spatial assimilation in Amsterdam

The second analysis makes use of the moving data within the municipality of Amsterdam and is aimed at testing ethnic enclaves and theories of spatial assimilation. Using a combination of BRP and BBGA data, several moving patterns are analyzed based on different categories of nationalities of international migrants. For this analysis, three distinct types of neighborhoods are created to allow analysis: “Native”, “Mixed” and “Segregated”. Previous research in a comparable context (Zorlu & Mulder, 2007; Musterd, 2003) used set thresholds for native, mixed and segregated neighborhoods:

A neighborhood is considered “**Native**” if **<=10%** of the neighborhood is of any ethnic minority;
A neighborhood is considered “**Mixed**” if **10 to 35%** of the neighborhood is of any ethnic minority;
A neighborhood is considered “**Segregated**” if **>=35%** of the neighborhood is of any ethnic minority.

However, both of these studies made use of data from earlier years (1999-2003) than this research (2013/2014). In the years between 1999 and 2013, neighborhood compositions in Amsterdam may have changed, which suggests that different thresholds to consider areas “native”, “mixed” or “segregated” should be applied for 2013 data. Also, the analyses by Zorlu & Mulder (2007) and Musterd (2003) were conducted through data of the entire Dutch population, whereas this research only focuses on Amsterdam, where relatively more migrants reside than in The Netherlands overall.

On the 22 neighborhoods scalar level, the BBGA (Municipality of Amsterdam, 2020) provides data of the number of migrants that live in each of these areas. However, the range of possible data selections does not allow for selecting only inhabitants of these neighborhoods that have a migration background. Therefore, this analysis utilizes a reverse method: the selection will contain the percentage of people with a Dutch migration background, and the consideration of native, mixed or segregated will be based on this percentage. *Figure 5.1* shows the 22 neighborhoods selected on the percentage of people with a Dutch migration background.

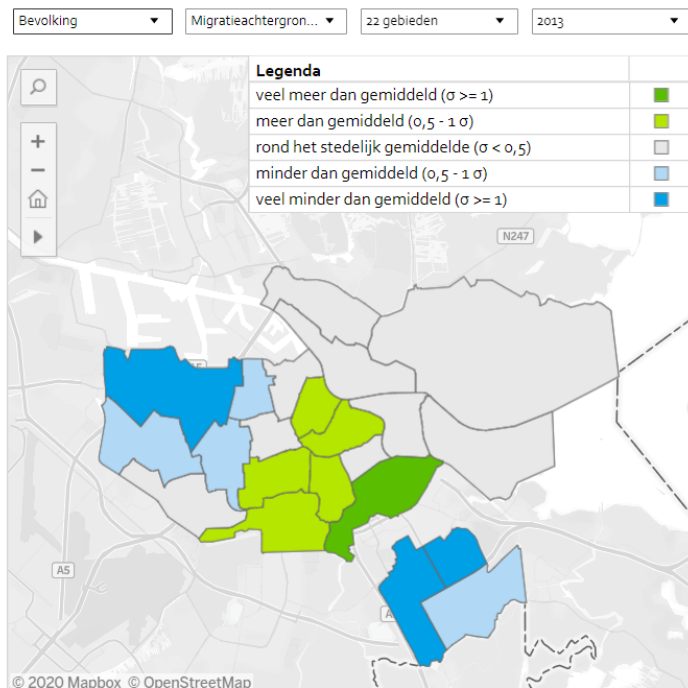


Figure 5.1: 22 neighborhoods; % of people with a Dutch migration background (BGGG, 2013);
 Legenda: much more than average ($\sigma \geq 1$), more than average ($0,5 - 1 \sigma$), around the city's average ($\sigma < 0,5$), less than average ($0,5 - 1 \sigma$), much less than average ($\sigma \geq 1$).

Through the selection visible in Figure 5.1, the thresholds for native, mixed and segregated neighborhoods are created. Neighborhoods that are colored green differ either $+0,5$ to $+1$ or $>+1$ standard deviation from the average % of people with a Dutch migration background, thus taken in reverse, these green neighborhoods have a much lower % of people with a non-Dutch migration background, meaning that these can be considered *Native*. The grey neighborhoods have a standard deviation ranging from $+0,5$ to $-0,5$, meaning that the % of people with a Dutch migration background (and also the % of people with a non-Dutch migration background) is near the average; these neighborhoods are thus considered *Mixed*. Lastly, the neighborhoods that are colored blue differ either $-0,5$ to -1 or <-1 standard deviation from the average % of people with a Dutch migration background, so taken in reverse, these blue neighborhoods have a much higher % of people with a non-Dutch migration background, meaning that these can be considered *Segregated*. The absolute percentages linked to Figure 5.1 can be found in Table 5.2. In STATA, a value ranked as 1 (native), 2 (mixed) or 3 (segregated) is added to the base file and linked to the 22 neighborhoods to allow analysis of subsequent moving patterns within the municipality of Amsterdam. Likewise, the number of neighborhoods per category including the absolute percentage of people with a Dutch migration background can be seen in Table 5.2.

Table 5.2: Division of neighborhoods (DXxx) per category in 2013, including % of people with Dutch migration background (BGGA, 2013)

“native” neighborhoods (6 in total) and % of people with Dutch migration background	DX01 – 62.2%, DX02 – 60.7%, DX10 – 64.1%, DX11 – 57%, DX12 – 61.5%, DX15 – 65.5%
“mixed” neighborhoods (9 in total) and % of people with Dutch migration background	DX03 – 55.7%, DX05 – 55.5%, DX08 – 54.2%, DX13 – 46.6%, DX14 – 46.7%, DX16 – 50.6%, DX17 – 56.6%, DX18 – 55.5%, DX19 – 43.6%
“segregated” neighborhoods (7 in total) and % of people with Dutch migration background	DX04 – 37.6%, DX06 – 28.5%, DX07 – 36.3%, DX09 – 36.1%, DX20 – 16.5%, DX21 – 21.4%, DX22 – 37.7%

Following all possible subsequent moves, international migrants’ subsequent migration within the municipality of Amsterdam can be categorized in 9 patterns:

Table 5.3: Possible subsequent migration based on spatial assimilation categories

	Native	Mixed	Segregated
Native	Native to Native (1)	Native to Mixed (2)	Native to Segregated (3)
Mixed	Mixed to Native (1)	Mixed to Mixed (2)	Mixed to Segregated (3)
Segregated	Segregated to Native (1)	Segregated to Mixed (2)	Segregated to Segregated (3)

With this categorization in mind, three separate analyses are ran to investigate all 9 possible patterns based on the area of origin (Native, Mixed or Segregated). This analysis is also a multinomial logistic regression, with the subsequent moving pattern as dependent variable, and age, gender and several categorizations of nationality as independent variables. The distribution of native/mixed/segreated initial and subsequent moves is shown in Table 5.4.

Table 5.4: Distribution of relative assimilation per neighborhood of initial- and subsequent moves

relative assimilati on of initial neighborho od	relative assimilation of subsequent neighborhood			Total
	Native	Mixed	Segregate	
Native	1,062	480	181	1,723
Mixed	318	425	205	948
Segregated	242	222	422	886
Total	1,622	1,127	808	3,557

Subsequently, the dependent variable for this analysis is created as main unit of analysis for this second study. The dependent variable is created on the basis of *spa_assimv* and *spa_assimn* which indicate the relative assimilation of the initial and subsequent neighborhood, respectively. Then, through two multinomial logistic regression models based on two differing categorizations of *nationality*, the subsequent moving patterns within municipality Amsterdam are analyzed and tested through the hypotheses in chapter 3.3.2. The model specifications look as follows:

To test hypothesis **2.1** and **2.2**: $\ln(\text{spat_assim}(\text{native/mixed/segregated}) \text{ divided by the probability of being in the reference category 'no move'}) = B0 + \text{age} + \text{age}^2 + \text{gslcha} + \text{natiob_western} + e_i$

This first specification uses subsequent migration from a native, mixed or segregated neighborhood as dependent variable, with non-movers as reference category. Here, a move within the same neighborhood is also seen as a move. The independent variables are age, age squared, gender (reference category Male) and nationality, divided into Western and non-Western (Western as reference category).

To test hypothesis **2.3**: $\ln(\text{spat_assim}(\text{native/mixed/segregated}) \text{ divided by the probability of being in the reference category 'no move'}) = B0 + \text{age} + \text{age}^2 + \text{gslcha} + \text{natiob_skilled} + e_i$

The second specification uses the same dependent variable as the first specification. However, this specification uses a different categorization of nationality, where the international migrants are divided into an approximation of not highly skilled (reference category) and highly skilled migrants.

6. Results

6.1 Descriptive statistics & results analysis 1

Table 6.1: Subsequent migration pattern of international migrants

subsequent migration pattern of international migrants	Freq.	Percent	Cum.
no subsequent move	9,595	68.57	68.57
subsequent move in mun Amsterdam	2,750	19.65	88.22
subsequent move in metro Amsterdam	311	2.22	90.45
subsequent move in NL	264	1.89	92.33
subsequent international move	1,073	7.67	100.00
Total	13,993	100.00	

As can be seen in *Table 6.1*, a total of 13.993 international migrants of age 18 and older moved from a foreign country to Amsterdam in 2013. Of all these international migrants, 68.57% did not perform a subsequent move. The remaining 31.63% performed a subsequent move, of which the biggest part were subsequent moves within the municipality of Amsterdam. This number is substantially higher than the average of the Netherlands, which confirms hypothesis 1.1 stating that international migrants in Amsterdam are more mobile than the native Dutch population: according to Statistics Netherlands (2019), about 13% of all inhabitants of the Netherlands moved within a timeframe of 2 years between 2011 and 2013.

Table 6.2: Gender of individual international migrants

Gender of individual	Freq.	Percent	Cum.
Male	7,100	50.74	50.74
Female	6,893	49.26	100.00
Total	13,993	100.00	

Table 6.2 shows the division of genders amongst all international migrants. Though there are slightly more male migrants, this difference is negligible. When only looking at international migrants that perform subsequent migration, the division of genders changes to about 54,5% males and 45,5% females as can be seen in *Table 6.3*. Apparently, male and female international migrants are equally likely to migrate to Amsterdam, but male international migrants are more likely to also perform subsequent migration.

Table 6.3: Gender of individual international migrants performing subsequent migration

Gender of individual	Freq.	Percent	Cum.
Male	2,360	54.54	54.54
Female	1,967	45.46	100.00
Total	4,327	100.00	

In *Table 6.4*, the average age of international migrants in Amsterdam can be seen. With an average age of about 29 years old, the international migrants are quite young compared to the average age of 40 in Amsterdam (Amsterdam in cijfers, 2019).

Table 6.4: Average age of individual international migrants

Variable	Obs	Mean	Std. Dev.	Min	Max
leeft_gen	13,993	29.25348	8.886401	18	89

Table 6.5 shows the nationality of all international migrants in the analysis, divided into continents. As to be expected, most migrants come from Europe. The other two large categories are migrants from Asia and the Americas.

Table 6.5: Nationalities of international migrants by continents

Nationality in categories	Freq.	Percent	Cum.
Europe	8,701	63.00	63.00
Africa	748	5.42	68.41
America	1,755	12.71	81.12
Asia	1,999	14.47	95.59
Oceania	259	1.88	97.47
Other, unknown	350	2.53	100.00
Total	13,812	100.00	

Lastly, *Table 6.6* shows the international migrants divided into Western and non-Western migrants, which is also the distinction used in the first analysis.

Table 6.6: Distribution of independent variable nationality

Nationality	Freq.	Percent	Cum.
Western	6,651	48.15	48.15
Non-Western	6,811	49.31	97.47
Double Nationality	350	2.53	100.00
Total	13,812	100.00	

The main analysis of this dataset consists of a multinomial logistic regression with *subsequent moving pattern* as dependent variable and *gender*, *age* and *nationality* as independent variables. The complete outcome of this analysis is significant with $p < 0.01$ and has a pseudo R-squared of 0.029. The main outcomes of the regression can be seen in *Table 6.7*.

Table 6.7: Multinomial logistic regression with nationality divided into Western/non-Western

		Subsequent move to			
		Municipality of <u>Amsterdam</u>	Metropolitan <u>Amsterdam</u>	Rest of the <u>Netherlands</u>	<u>International</u> move
Gender (ref. Male)	Female	-0.201***	-0.493***	-0.409***	-0.032
Age category (ref. 25-34)	18-24	-0.664***	-1.031***	-1.022***	0.597***
	35-44	-0.095	-0.001	0.261*	-0.261**
	45-54	-0.134	-0.426	-0.536	-0.602***
	55+	-0.305*	-0.908	-0.706	-0.205
Nationality (ref. Western)	non-Western	0.117***	1.247***	1.128***	-0.344***
	Double nation.	0.712***	0.663	0.889**	-0.094
Constant		-1.016***	-3.703***	-3.885***	-2.240***

*** p<0.01, ** p<0.05, * p<0.1

The direction and significance of the coefficient of gender differs per category of *subsequent moving pattern*. Although females are less likely to perform a subsequent move than males in the municipality of Amsterdam, in metropolitan Amsterdam and in the Netherlands (-0.201; p<0.01 ; - 0.493; p<0.01 ; -0.409; p<0.01), this difference is not apparent for subsequent international moves (-0.032; p>0.1), where the coefficient is almost 0 and insignificant. Apparently, male international migrants are overall more likely to perform a subsequent move anywhere within the Netherlands than female migrants, but female international migrants are as likely as male international migrants to perform a subsequent international move. Following this result, hypothesis 1.2 is only partially supported; male migrants are more likely to perform subsequent moves within the Netherlands than females, but both genders are equally likely to perform a subsequent international move.

Generally, the international migrants aged 25-34 are the most mobile age category. Both the youngest and oldest age categories are less likely to perform a subsequent move in the municipality of Amsterdam than the reference category of 25-34: (-0.664; p<0.01 for 18-24 ; -0.305; p<0.1 for 55+). For the age category of 18-24, this pattern continues for subsequent moves in metropolitan Amsterdam and subsequent moves in the Netherlands. The differences between the reference category and the oldest category also remain negative, but become slightly insignificant for all moves except for moves within the municipality of Amsterdam.

The youngest age category of 18-24 shows to be significantly more likely to perform a subsequent international move than the reference category of 25-34 (0.597; p<0.01). This difference might be explained by (exchange) students who come to study in Amsterdam for a short period of time, as these often fall in the age category of 18-24. Subsequently, hypothesis 1.3 is not supported. Age does not have a negative, linear correlation with subsequent migration as predicted; instead, it follows a curvilinear form where it first increases the chance of subsequent migration and then decreases again. Also, some exceptions in this relation exist.

Lastly, hypothesis 1.4 is tested through the *Nationality* variable. The coefficients and significance of “Non-Western” in every category of the dependent variable indicate that there are indeed differences in the subsequent moving patterns of Western and non-Western international migrants. Non-Western migrants are a little more likely to perform a subsequent move in the municipality of Amsterdam (0.117; $p < 0.01$) than Western migrants, and much more likely to perform a subsequent move in metropolitan Amsterdam (1.247; $p < 0.01$) and within the Netherlands (1.128; $p < 0.01$). However, non-Western migrants are less likely to make another international move than western migrants (-0.344; $p < 0.01$).

Following these results, non-Western migrants seem to make significantly more subsequent moves within the Netherlands, but less international subsequent moves. This pattern could indicate that non-Western migrants do not have Amsterdam as their final destination in the Netherlands as often as Western migrants do, but the Netherlands is more often the destination where they stay than for Western migrants. Another explanation for this pattern could be the migrant status of international migrants arriving in the Netherlands. International migrants that arrive in Amsterdam as refugee- or asylum migrant are likely non-Western migrants who are unlikely to perform a subsequent international move within the year they arrive, which is the time frame of this research. Lastly, the general higher familiarity with Dutch culture and language of Western international migrants might enable them to more easily find a fitting place to live than non-Western international migrants, which might also be part of these found differences in subsequent migration patterns.

Likewise, hypothesis 1.4 is only partially supported. Although non-Western international migrants do indeed perform more subsequent moves in the municipality of Amsterdam than Western migrants, they are also much more likely than Western international migrants to perform a subsequent move within metropolitan Amsterdam and within the rest of the Netherlands.

International migrants with a double nationality also show significantly different subsequent migration patterns from Western migrants: they are more likely to perform a subsequent move within the municipality of Amsterdam (0.712; $p < 0.01$) and to the rest of the Netherlands (0.889; $p < 0.05$) than Western international migrants. However, due to the small size of this group as can be seen in *Table 6.6* and the large diversity within this group, consisting of both international migrants with a double foreign nationality and international migrants with a Dutch + foreign nationality, no conclusions can be drawn from this result.

6.2 Results analysis 2

Analysis 1 has shown how subsequent migration patterns from international migrants in Amsterdam occur mostly within the Amsterdam municipality. This second analysis dives deeper into this pattern to see what these subsequent migration flows within the municipality look like. *Table 6.8, 6.9 & 6.10* show the descriptive statistics for the dependent variables that are used in analysis 2.

Table 6.8: Initial move from native area

Initial move from Native area	Freq.	Percent	Cum.
Native Stay	4,894	75.43	75.43
Native to Native	965	14.87	90.31
Native to Mixed	456	7.03	97.33
Native to Segregated	173	2.67	100.00
Total	6,488	100.00	

Table 6.9: Initial move from mixed area

Initial move from Mixed area	Freq.	Percent	Cum.
Mixed Stay	2,806	76.42	76.42
Mixed to Native	287	7.82	84.23
Mixed to Mixed	389	10.59	94.83
Mixed to Segregated	190	5.17	100.00
Total	3,672	100.00	

Table 6.10: Initial move from segregated area

Initial move from Segregated area	Freq.	Percent	Cum.
Segregated Stay	2,788	77.62	77.62
Segregated to Native	226	6.29	83.91
Segregated to Mixed	208	5.79	89.70
Segregated to Segregated	370	10.30	100.00
Total	3,592	100.00	

These descriptive statistics show that the *native* category is the largest, with most international migrants moving from native to native areas. The moves from mixed and segregated areas are of about equal size. In *Table 6.11*, the results related to hypothesis 2.1 and 2.2 can be found, where moves from native/mixed/segregated neighborhoods are analyzed based on categorizations of Western vs non-Western international migrants.

Table 6.11: Multinomial logistic regression with nationality divided into Western / non-Western / Double Nationality

	Native to..			Mixed to..			Segregated to..		
	Native	Mixed	Segregated	Native	Mixed	Segregated	Native	Mixed	Segregated
Age	0.173***	0.149***	0.186**	0.142***	0.074**	-0.017	0.083*	0.114**	0.091**
Age^2	-0.002***	-0.002***	-0.003**	-0.002***	-0.001*	-0.000	-0.001*	-0.002**	-0.001**
Female (ref. male)	-0.202***	-0.201**	-0.318**	0.183	0.190*	-0.374**	-0.077	0.057	-0.013
non-Western migrants (ref. Western migrants)	-0.181**	-0.240**	0.333**	-0.558***	-0.269**	0.463***	-0.611***	-0.431***	0.124
Double nationality (ref. Western migrants)	-0.601*	0.165	-14.205	-1.898***	0.275	-0.212	-1.419**	-0.544	-0.529
Constant	-4.555***	-4.341***	-5.817***	-4.633***	-3.433***	-2.195***	-3.532***	-4.266***	-3.608***

*** p<0.01, ** p<0.05, * p<0.1

Following the leftmost section in *Table 6.11*, non-Western migrants are significantly less likely to move from a native area to another native area (-0.181; p<0.05) and from a native area to a mixed area (-0.240; p<0.05) than Western migrants, but more likely to move from a native area to a segregated area (0.333; p<0.05) than Western migrants. These results seem logic and are in accordance with research of Zorlu & Mulder (2007) and Bolt & van Kempen (2010). Since Western migrants are culturally closer to the native Dutch population, spatial assimilation theories indicate that these migrants are more inclined to make a subsequent move towards native or mixed areas. In reverse, the pattern of non-Western migrants moving from native to segregated areas more than Western migrants also accords with theories of spatial assimilation and previous research like Zorlu & Mulder (2007) and Musterd (2003).

The middle section in *Table 6.11* further argues for these findings. Compared to Western migrants, non-Western migrants are much less likely to migrate from mixed to native areas (-0.558; p<0.01) or from mixed to other mixed areas (-0.269; p<0.05). Once again, the non-Western migrants are more likely to migrate from mixed to segregated neighborhoods than Western migrants (0.463; p<0.01). These results compliment the findings of the first table. Interesting to see is that even when initially settling in a mixed area, moving to another mixed area is less likely for non-Western migrants than for Western migrants.

The rightmost section in *Table 6.11* shows more significant results that can be related to the previously mentioned findings. Non-Western migrants are much less likely (-0.611; p<0.01) than Western migrants to perform a subsequent move from a segregated to a native neighborhood and also much less likely (-0.432; p<0.01) to perform a subsequent move from a segregated to a mixed neighborhood. However, the likelihood for non-Western migrants to migrate from a segregated to another segregated area is only slightly higher and insignificantly different (0,124; p>0.1) from Western migrants. This result is unexpected, as non-Western migrants are generally much more likely to perform subsequent migration towards segregated areas from both native and mixed areas.

Apparently, Western migrants are less likely than non-Western migrants to move towards segregated areas if their initial area of settlement was native or mixed, but this pattern disappears if their initial area of settlement was a segregated area already.

Through the results of this analysis, hypothesis 2.1 is accepted. All three moving patterns towards native areas (Native → Native; Mixed → Native; Segregated → Native) occur significantly more when looking at Western international migrants. This also accords with the previous research (Zorlu & Mulder, 2007; Musterd, 2003; Bolt & van Kempen, 2010) and the general theories of spatial assimilation, since the Western international migrants are closer to the native Dutch population and thus more likely to move towards native areas.

Subsequently, hypothesis 2.2 is not fully supported. Although non-Western migrants perform more subsequent moves towards segregated areas coming from both native- and mixed areas, this pattern does not occur for subsequent moves from segregated to segregated areas. Apparently, non-Western international migrants are only more likely to move to segregated areas than Western international migrants, if the initial area of settlement was a non-segregated area. Previous research fails to explain this exact pattern, but additional independent variables on both individual and neighborhood level such as income, education and type of migrant might have provided an explanation here.

The subsequent moving patterns of international migrants with a double nationality show some significant differences from the reference category of Western migrants, but as already mentioned in the first analysis, the low sample size and large diversity within this group make it impossible to draw any conclusions from this outcome.

In order to test hypothesis 2.3, the nationality variable is divided into highly skilled / not highly skilled as explained in the data chapter. Results of this analysis can be found in *Table 6.12*.

Table 6.12: Multinomial logistic regression with nationality divided into highly skilled / non highly skilled

	Native to..			Mixed to..			Segregated to..		
	Native	Mixed	Segregated	Native	Mixed	Segregated	Native	Mixed	Segregated
Age	0.168***	0.133***	0.197**	0.136***	0.072**	-0.006	0.062	0.099*	0.097***
Age^2	-0.002***	-0.002***	-0.003***	-0.002***	-0.001*	-0.000	-0.001	-0.001*	-0.001**
Female (ref. male)	-0.217***	-0.237**	-0.325**	0.183	0.170	-0.341**	-0.067	0.051	-0.006
Highly skilled migrants (ref. non highly skilled)	-0.364***	-0.888***	-0.454**	0.511***	-0.173	-0.407	0.412**	-0.131	-0.505**
Constant	-4.448***	-3.993***	-5.771***	-4.756***	-3.441***	-2.176***	-3.491***	-4.157***	-3.602***

*** p<0.01, ** p<0.05, * p<0.1

The results indicate that highly skilled migrants are less likely (-0.364; p<0.01) to migrate from a native to another native area than non-highly skilled migrants. This pattern is consistent in the other subsequent moves from native to mixed (-0.888; p<0.01) and native to segregated (-0.454; p<0.05).

Apparently, highly skilled migrants are in general less likely to migrate than non-highly skilled migrants if their initial area of settlement is a native area. This finding complements the research of Harvey & Beaverstock (2016), where highly skilled migrants showed low spatial segregation from the native, generally higher income population.

In the middle section of *Table 6.12*, a high likelihood for highly skilled migrants to migrate towards a native neighborhood from a mixed neighborhood (0.511; $p < 0.01$) can be seen compared to non-highly skilled migrants. This pattern turns around when looking at the likelihood of highly skilled migrants performing moves from mixed to mixed (-0.173; $p > 0.1$) or mixed to segregated areas (-0.407; $p > 0.1$), though it is important to note that these results do not differ significantly from the moving patterns of non-highly skilled migrants. These findings indicate that highly skilled migrants are much more likely to move towards native areas than non-highly skilled migrants, which again accords with the research of Harvey & Beaverstock (2016).

The rightmost section of *Table 6.12* once again shows a high likelihood for highly skilled migrants to migrate from segregated to native areas (0.412; $p < 0.05$) compared to non-highly skilled migrants. Moves from segregated to mixed areas portray an insignificant result (-0.131; $p > 0.1$) and thus no difference can be seen in the occurrence of such moves between highly skilled and non-highly skilled migrants. In contrast with this, subsequent moves from segregated to segregated areas occur much less for highly skilled migrants than non-highly skilled migrants (-0.505; $p < 0.05$).

With the results of this last analysis in mind, hypothesis 2.3 is accepted, as in both the case of “mixed → native” and “segregated → native” highly skilled migrants are more likely to perform a subsequent move than non-highly skilled migrants. These results can be linked to both patterns that were seen in previous research. On the one hand, the findings of Harvey & Beaverstock (2016) where highly skilled migrants would live in higher income neighborhoods with other economic migrants is consistent with the high likelihood of moving to native neighborhoods, which are often more affluent (OIS, 2013). On the other hand, the findings of Scott (2007) can also be related to the findings of this analysis, where highly skilled migrants are active in associating with other highly skilled migrants rather than the native population; as the highly skilled migrants are likely to move to native neighborhood, these moves may not just be related to the ubiquity of the native population in these areas, but also with the higher presence of highly skilled migrants.

7. Conclusion & Discussion

7.1 Conclusion

In this research, two main analyses were conducted to answer the main research question: *“How do personal and neighborhood characteristics influence the subsequent location choice of international migrants after an initial move to Amsterdam”*. The results showed how both personal- and neighborhood characteristics vastly change the subsequent migration patterns of international migrants in Amsterdam. First of all, the researched group of migrants are highly mobile, as over 30% of the population performed a subsequent move within the year of arrival.

Most personal characteristics were significantly associated with the subsequent migration patterns: Although the initial population that arrived in Amsterdam was equally divided into males and females, male migrants were more likely to perform a subsequent move anywhere within the Netherlands. However, this difference was not found for subsequent international moves, where gender was not significantly related to the likelihood to emigrate again.

The age of migrants also significantly influences their subsequent location choice. In general, the group of international migrants was much younger (~29 vs ~40 years old) than the overall Amsterdam population. International migrants of the age category 25-34 were most mobile compared to other age groups with only one exception; migrants aged 18-24 were more likely than any other age group to make a subsequent international move, which is probably linked to international/exchange students who are often of this age.

When looking at the nationality of international migrants, Western migrants were much less inclined to make a subsequent move within the Netherlands than non-Western migrants. This pattern of higher subsequent migration turns around for subsequent international moves, which are more often performed by Western migrants. Perhaps many Western migrants moved to the Netherlands with Amsterdam as final destination, whereas non-Western migrants more often moved again either within Amsterdam, in metropolitan Amsterdam or somewhere else in the Netherlands. Other explanations of this pattern might be linked to the possible differences in opportunities of finding a suitable place to live between Western and non-Western migrants.

Neighborhood characteristics and levels of segregation are just as important as personal characteristics for subsequent migration patterns of international migrants. Spatial assimilation is visible in most of these subsequent migration patterns: both Western- and highly skilled migrants who are assumed to be closer to the native Dutch population, show patterns of spatial assimilation by moving significantly more towards native areas. The findings for highly skilled migrants can also be related to previous research on this topic, where the highly skilled migrants move to higher income neighborhoods and neighborhoods where more other highly skilled migrants reside.

7.2 Discussion & reflection

This research focused on subsequent migration of international migrants in Amsterdam and patterns of spatial assimilation within the municipality of Amsterdam. The results of the first analysis were mostly in line with the expectations created through the theoretical framework and research background; international migrants in Amsterdam are mobile, young and about equally divided in gender and nationality (Western / non-Western). The results of the second analysis were also generally in accordance with the stated hypotheses.

Since the overall results and interpretation hereof have already been discussed, it is of importance to critically address the strengths and weaknesses that came with the choice of data and methods. Interesting to mention is how one of the greatest strengths of this research are also its greatest weaknesses, being the data used. The analyses consisted almost entirely of register data, which means that the patterns in these analyses provide a complete view of all registered subsequent migration of international migrants in Amsterdam. However, as the name implies, register data only contain registered address changes. This means that any unregistered moves, both internally and out of the Amsterdam or the Netherlands, are not included in the data and this research.

Related to the selection of register data is the choice to research subsequent migration within a year. Though this is an interesting avenue of analysis that is relevant for international migrants, it should be made clear that this does not provide a complete overview of subsequent migration. As subsequent migration is not bound to a time frame, moves within five or even ten years might also be considered as subsequent migration, and if the data of international migrants in Amsterdam were analyzed through such a longer time frame, the results might be very different from what has been found here.

Even though register data are rich in quantity, the data give away very little information on both the personal and the neighborhood level. This research used register data to showcase moving patterns and spatial assimilation of international migrants, and although these patterns can be seen clearly through the register data, reasoning behind the shown patterns lacks. The independent variables that were used to explain the subsequent moving patterns and patterns of spatial assimilation consisted of age, nationality and gender, but research has shown that many other personal factors can be of effect on (subsequent) location choice of international migrants: the migrant status (refugee, asylum, student, family etc.), household type of the migrant, individual income, level of education, religiosity and many more factors may contribute to this choice. In this research, nationality was used as proxy for educational level of international migrants. Although this provided a decent indication considering the lack of data on individual education, it is not a perfect solution.

Related to the personal factors that might influence the subsequent moving patterns of international migrants is nationality. Although this research investigated several distinctions of nationality, the sample size of international migrants who arrived and moved within one year was too small to separately look at international migrants of particular origins. This might prove to show different patterns from what was found through the distinctions used in this research, as some migrant groups in Amsterdam are known to cluster in certain neighborhoods.

The same weakness applies to data on the neighborhood level: perceived status of the neighborhood, population density, whether the neighborhood is child-friendly, average house values, employment opportunities and many other factors might impact the subsequent location choice of international migrants, but were not included in this analysis. Also, the classification of native/mixed/segregated neighborhoods through % migrants with a (non) Dutch background is a little superficial, and could be elaborated upon by looking at concentrations of certain migrant groups and filtering noise caused by large student complexes, elderly homes and such. Multilevel modelling of the individual characteristics from the register data with neighborhood characteristics from the municipality of Amsterdam could also be an option to resolve the previously mentioned issues; another alternative could be to correct for standard errors for clustering of individuals in neighborhoods.

Ultimately, the main weaknesses do not impede the goal of this research, which was to showcase subsequent moving patterns of international migrants. Even so, the characteristics of the register data make it hard to say anything about the reasoning and motivations behind the found patterns. For future research, it would be interesting to add some more neighborhood statistics and see if this creates different patterns of spatial assimilation. Of course, most interesting would be to have a combination of individual characteristics, moving motivations and extensive neighborhood characteristics so that both patterns and motives behind these found results can be analyzed.

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