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Educational Attainment and Neighbourhood Outcomes: Differences between Highly-Educated Natives and Non- Western Ethnic Minorities in the Netherlands

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ABSTRACT

Educational Attainment and Neighbourhood Outcomes: Differences between Highly-Educated Natives and Non-Western Ethnic Minorities in the Netherlands

In the Netherlands, obtaining a higher education increases the chance to move to a better neighbourhood for native Dutch adults who grew up in a deprived parental neighbourhood. For non-Western minorities, education does not have this positive effect on socio-spatial mobility. In this study we investigate potential explanations for these ethnic differences in the relationship between educational attainment and neighbourhood outcomes over time. We use longitudinal register data from the Netherlands to study a complete cohort of parental home leavers who attained a higher education by the end of the measurement period (1999 to 2012). We supplemented this data with information gathered in the WoON-survey. We examined differences in income trajectories for highly-educated native Dutch and non-Western ethnic minorities; investigated the strength of intergenerational transmission of income for both groups; and assessed individual neighbourhood experiences and contentment. We find that the highly-educated native Dutch in our subpopulation have a substantially higher average income over time, and a weaker association to the income of their parents compared to the non-Western ethnic minorities. Additionally, for ethnic minorities, our results show that the level of contentment with their neighbourhood is highest in deprived neighbourhoods compared to more affluent residential environments, and they more often reside in close proximity to their parents compared to the native Dutch, both suggesting an element of choice in neighbourhood selection.

JEL Classification: I30, J60, P46, R23

Keywords: neighbourhood histories, intergenerational transmission, income, education, ethnicity, longitudinal data

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Introduction

Characteristics of the residential neighbourhood have repeatedly been argued to amplify the consequences of individual advantage and disadvantage. Exposure to an affluent neighbourhood, for example, was shown to positively affect educational and income levels, as well as social mobility patterns later in life (Van der Klaauw and van Ours 2003; Simpson et al. 2006; Van Ham et al. 2014). Exposure to deprived neighbourhoods, on the other hand, has been argued to negatively affect, for instance, childhood achievement, transition rates from welfare to work, and delinquency (for a compilation see Ellen and Turner 1996; Overman 2002; Galster et al. 2010; Friedrichs and Blasius 2003). One shortcoming of many studies into neighbourhood effects is that they were unable to examine *long-term* individual neighbourhood experiences due to a lack of longitudinal geo-coded data (Sharkey and Elwert 2011; Galster 2012; de Vuijst et al. 2017; 2016). An increasing number of authors now stress that information on the combination and accumulation of residential experiences over the life course - full dynamic neighbourhood histories - is vital to truly understand the connection between the neighbourhood and individual outcomes (Sharkey and Elwert 2011; Musterd et al. 2012; Galster 2012; Van Ham et al. 2014; de Vuijst et al. 2017). For this reason, more and more studies now take an explicit life course approach to understanding neighbourhood effects over time (Hedman et al. 2013; Van Ham et al. 2014; de Vuijst et al. 2017; 2016)

In previous research in the Netherlands, De Vuijst et al. (2017) found that for children who grew up in deprived neighbourhoods, the deprived parental neighbourhood remained a strong predictor for their neighbourhood trajectories in adulthood, up to 13 years after leaving the parental home. Children who grew up in poor neighbourhoods were found to be more likely to live in similarly poor neighbourhoods later in life (*ibid.*), in line with research conducted in Sweden and the United States (Hedman et al. 2013; Van Ham et al. 2014; Sharkey and Elwert 2011). Furthermore, the study showed that for those growing up in deprived neighbourhoods, obtaining a higher level of education could reduce the effect of the parental neighbourhood later in life; breaking intergenerational patterns. However, this effect of education was only found for the native Dutch population. In other words, the neighbourhood outcomes of highly educated native Dutch individuals have a weaker association to their parental neighbourhood characteristics than those of other ethnic groups. For individuals from a deprived parental neighbourhood *and* a non-Western ethnic minority background, a higher level of education did not decrease the chance of living in poverty concentration later in life: their likelihood to live in poverty concentration remained substantially higher than that of native Dutch inhabitants overall, including those with a lower education (de Vuijst et al. 2017).

This study extends the work of De Vuijst et al. (2017), and uses the same longitudinal register data provided by Statistics Netherlands, to get more insight in the underlying causes of these differential effects of education for ethnic groups. We focus on the following research question: To what extent are ethnic differences in the moderation of intergenerational neighbourhood patterns through higher educational attainment determined by income (1), intergenerational income transmission (2), and neighbourhood preferences (3)? This paper will thus provide an in-depth analysis of the income trajectories of different highly-educated ethnic groups and relate these trajectories to the characteristics of their parental neighbourhood.

Our analytical strategy consists of a number of steps. First, we investigate the income differences within the highly-educated research population from deprived parental neighbourhoods along the lines of their ethnicity. Higher average incomes for the native Dutch in this subgroup, compared to non-Western ethnic minorities, could in part explain why ethnic minorities are less likely to experience socio-spatial mobility over time. Second, we run

multilevel models on the intergenerational transmission of income, by ethnicity and education. It is well-known that poverty transmits between generations (Blanden et al. 2005; Bloome 2014), and the neighbourhood can be seen as a spatial dimension to such intergenerational transmission patterns (de Vuijst et al. 2017). Historically, ethnic minorities have had lower incomes than the native population in the Netherlands. As income can be a strong determinant of individual residential outcomes, a stronger intergenerational income continuity for highly-educated non-Western ethnic minority groups, compared to their Dutch counterparts, may substantially determine their residential location. Finally, following an explanation opted by de Vuijst et al. (2017), we consider whether ethnic minority groups are more likely to end up in poorer neighbourhoods because they choose similar residential neighbourhood to the ones they grew up in, and because they want to live close to family. This element of choice could be related to the presence of certain shops, local societies, religious services and other amenities that cater for the needs of ethnic minorities and are often clustered within a small number of relatively poor neighbourhoods in the largest Dutch cities. These services and facilities are important in everyday life, and high concentrations of fellow inhabitants with a similar ethnic background can create a feeling of social inclusion, as well as a buffer against discrimination (Coenen et al. 2016). Therefore, highly-educated ethnic minorities may in part choose to remain in these neighbourhoods after leaving the parental home, regardless of their educational attainment and subsequent options, partly due to a sense of belonging. In order to further examine this possibility, we investigate subjective observations on neighbourhood experiences collected in the Netherlands' Housing Survey 2012 (Statistics Netherlands 2012). This survey gathered information about the housing situation of the Dutch population, with a sample taken from all Dutch residents 18-years and up, for whom address information was available (N = 69,330). Additionally, we investigate the presence of direct family members in the living environment of both highly-educated native Dutch and ethnic minority groups. By examining the three possible explanations listed above, we aim to shed more light on the differences in moderation of a parental effect on individual neighbourhood outcomes between highly-educated native Dutch and non-Western ethnic minority groups.

Theoretical background

There are large lingering differences in the socio-economic outcomes of the non-Western ethnic minority population and the native Dutch population in the Netherlands. Reports from Statistics Netherlands reveal that for the largest ethnic minority groups, notably Turks, Moroccans, Surinamese and Antilleans, outcomes on education, income, housing, and even health, are considerably worse compared to Dutch natives (Lucassen and Penninx 1997). These patterns have been in place ever since the large immigrant influx from the abovementioned countries and states from the 1960s onwards (ibid.). Historically, ethnic differences in income have been most pronounced as new migrants were often part of sourced foreign labour migration schemes initiated by the Dutch government, actively seeking workers for lower income manual labour in large national companies (ibid.). Family migration and reunification followed over the next 15 to 20 years. Due to the need for affordable housing after immigration, large groups of ethnic minorities became clustered in poor residential neighbourhoods in the bigger Dutch cities. As such, the housing outcomes of migrant workers reflected their income divergence compared to the native Dutch. Over the following decades, up to recent years, lasting lower incomes for non-Western ethnic minority groups in the Netherlands were mostly accredited to lower levels of education and language

barriers among first generation migrants, trickling down through the generations; with offspring experiencing low education and income as adults over the life course.

Poverty is known to be transferable between generations, and the literature stresses the lack of upward social mobility for individuals from a poor parental background (Blanden et al. 2005; Bloome 2014). Recent studies suggest that housing and neighbourhood outcomes over the life course can be seen as a spatial dimension or translation of such intergenerational transmission patterns (de Vuijst et al. 2017). The authors found that for native Dutch children from deprived parental neighbourhoods, obtaining a higher education increased the chance of moving to a better neighbourhood later in life. For ethnic minority children, such an effect of education on socio-spatial mobility was not found, and their likelihood to reside in a deprived neighbourhood remained substantially higher than that of native Dutch inhabitants overall, even than those with a lower education (ibid.). Interestingly, for highly-educated ethnic minorities, traditional explanations of lingering ethnic inequality do not apply as they experience less advantageous neighbourhood outcomes compared to their native Dutch counterparts.

Income and the intergenerational transmission of poverty

The intergenerational transmission of neighbourhood characteristics and the intergenerational transmission of poverty are likely to be strongly interconnected - and may in many cases be directly translatable (Becker and Tomes 2002; Solon 2002; D'Addio 2007; de Vuijst et al. 2017). After all, income is a strong determinant of individual residential outcomes. Additionally, a recent OECD rapport shows a strong negative significant effect of growing up in a deprived parental neighbourhood on individual income over time (van Ham et al. 2016). In this study, we focus on two specific income-related factors as a possible explanation of ethnic differences in neighbourhood outcomes for highly-educated individuals. First, the differences in neighbourhood outcomes for higher educated natives and non-western ethnic minorities might be partly explained by differences in their earnings. Second, if there are ethnic differences in the income-levels of both highly-educated groups, one has to consider both intragenerational and intergenerational factors that could determine this divergence. On the one hand, there may be personal factors that shape opportunities in job and income attainment that are different for individuals from different ethnic groups. For instance, individuals from a non-Western ethnic minority may experience specific problems in entering the labour market that do not apply to their native Dutch counterparts, such as implicit or explicit discrimination or cultural bias, or fewer highly-educated/connected ties that may help in the job seeking progress. This can therefore result in income-divergence between ethnic groups with a similar level of education. It is also likely that there are other intergenerational factors which lead to lower incomes of non-Western ethnic minorities compared to their Dutch counterparts (see Galster 2012 for an extensive discussion) (de Vuijst et al. 2017). From a very young age, children are socialised into adhering parental norms and values, as well as the cultural and social norms of the individuals and environments their parents are involved with on a daily basis (ibid.). In other words, an individual's early attitudes towards customs and social processes will largely be the same or highly similar to those of their parents, and people they additionally are exposed to through their parents. Over time, these norms and values will naturally keep developing, but parental convictions can continue to have consequences for individual outcomes over the life course; strongly determining attitudes towards full-time versus part-time employment, the importance of career development, family-formation patterns and timing, and further socioeconomic factors, thus shaping outcomes in these areas of life (Bisin and Verdier 1998; Galster 2012). For relatively small ethnic minority groups within a larger 'host'-society, the maintenance of cultural traits, customs, and values between generations is likely to be stronger, or deemed more important,

than between generations of the native population. Therefore, as the intergenerational transmission of poverty is likely to be strongly connected to the transmission of neighbourhood outcomes, the intergenerational component may be more pronounced to non-Western ethnic minorities from a deprived parental neighbourhood compared to native Dutch from a similar residential and family background.

Neighbourhood preference and selection

In addition to possible income- and parent-related determinants of individual residential outcomes over time, neighbourhood preferences are also likely to play an important role in defining neighbourhood outcomes for highly-educated non-Western ethnic minorities. Previous studies on neighbourhood outcomes (see for example Vartanian et al. 2007; Sharkey and Elwert 2011; Van Ham et al. 2014) often did not investigate neighbourhood selection processes due to a lack of data. We argue however, that neighbourhood choice *needs* to be explicitly considered before drawing any conclusions on differences in neighbourhood outcomes between ethnic groups. Previous studies examining intergenerational neighbourhood outcomes, have predominantly attributed their results to parent-to-child inheritance mechanisms, as discussed above (ibid.). Additionally, children have repeatedly been shown to prefer similar types of accommodation to their parents with regard to homeownership, which subsequently affects their choice of neighbourhoods throughout life (Kunz et al. 2003; Helderma and Mulder 2007; Feijten et al. 2008). However, while these diverse transmission mechanisms undoubtedly play an important role in determining individual neighbourhood outcomes over time, individuals may also prefer similar types of neighbourhoods to those of their parents because the composition and facilities are familiar to them, or because they want to be close to family members, regardless of educational attainment. After the initial arrival of migrants to poorer inner-city neighbourhoods, non-Western ethnic minorities established themselves and their families in local communities, which soon offered services and facilities for everyday life that could not be found in other neighbourhoods, such as stores with international produce, local societies, and religious facilities. Therefore, a strong positive association to the parental neighbourhood could be a reason for staying in this neighbourhood, or a similar one, despite gaining a higher education after leaving the parental home (and thus likely having the option to move). This would be an alternative explanation for the often heard argument that ethnic minorities live concentrated because they have no alternative options. In other words, higher educational attainment may not result in moving to a more affluent neighbourhood partly because people choose to live in a neighbourhood similar to where they grew up.

In addition to a strong positive association to the parental neighbourhood for non-Western ethnic minorities, there is the possibility of a negative association; in which case individuals do choose to live in a specific setting, that resembles their ethnic background, but not for positive reasons: i.e. a choice without feasible/comfortable alternatives. Research in Flanders, Belgium has recently shown that 'ethnic enclaves' in large inner-city regions can serve as a buffer against discrimination experienced outside of that residential setting (Coenen et al. 2016). As previously discussed, it is likely that highly-educated non-Western ethnic minorities continue to experience certain difficulties that do not apply to their native Dutch counterparts, for instance facing possible implicit or explicit discrimination or cultural bias when entering the labour market, or perhaps having fewer ties that can help in looking for a job. Should this be the case, educational attainment gives everyone the same opportunities in theory but certainly not in practice. These difficulties can in turn lead to a feeling of social alienation from the majority groups in society, or society at large, and a neighbourhood with a high percentage of individuals from a similar ethnic background can help shield its residents from these negative experiences.

Analytic strategy

In the current study, we examine a number of potential explanations for differences between ethnic groups in the moderation of intergenerational neighbourhood effects through higher educational attainment. We compare the average incomes of highly-educated natives and non-western ethnic minorities from deprived parental neighbourhoods. Following on, in order to investigate the degree of intergenerational continuity of income for both groups, we run multilevel models on the parent-to-child transmission of income, and examine the strength of the association. Finally, we analyse the outcomes of a selection of questions from the WoON-survey, in which information on neighbourhood experiences were collected for a large Dutch subgroup. We focus on questions regarding dwelling and neighbourhood satisfaction, as well as a sense of belonging in the residential environment. We subsequently investigate the presence of family members in the same residential area for both ethnic groups, to get more insight in the role of the proximity of family in neighbourhood choice.

Register data

We use administrative microdata from the System of Social statistical Datasets (SSD hereafter), provided by Statistics Netherlands. The SSD is an integrated, longitudinal database of numerous surveys and registers, and contains core demographic, socio-economic and geographic observations on the entire population of the Netherlands (Bakker et al. 2014). Data for this study were available from 1999 to 2012, which enabled us to track individuals over a 14-year period. There was almost no attrition (as we did not use a sample), but excluded individuals who died or emigrated during the measurement period. We selected individuals aged 16 to 25 in 1999, for whom we had full demographic, socioeconomic and residential information, who lived with their parents in 1999, and had left the parental home in the following year (2000). If this selection included both partners in a household (registered partnership or marriage), i.e. if both fitted the selection criteria described above, we dropped one of them at random. This selection resulted in a database with 119,167 Dutch residents with a total of 1,668,338 person-years over the 14-year study. Out of this group, we were particularly interested in individuals with a higher educational attainment from a deprived parental neighbourhood. Tables 1 and 2 provide an overview of the descriptive statistics of this highly-educated group, both for the native Dutch (N = 10,389) and non-western ethnic minority individuals (N = 1,819) in 2000 (having left the parental home), 2006, and 2012¹. We additionally show a number of residential descriptives.

Neighbourhoods are operationalised using 500x500 meter grids. The Netherlands consist of 34,094 inhabited 500x500 meter grid cells containing 496 inhabitants on average. Grids are smaller than most standard Dutch administrative units, such as postal code areas, and are more likely to approximate peoples' perceived neighbourhood boundaries and day-to-day neighbourhood environment than larger areas/scales. The advantage of grids is that their boundaries are constant over time and their size comparable over the Netherlands. Neighbourhood socio-economic status is measured by the concentration of poverty within the grid, based on personal income; defined as the sum of income from wages, benefits, and student scholarships/loans. Neighbourhoods in the first income quintile have the lowest concentration of poverty, while those in the fifth quintile have the highest concentration of poverty. Following on, we refer to neighbourhoods in the latter category as deprived or poverty neighbourhoods.

¹ For descriptives on the entire data subgroup (N=119,167) see the original study de Vuijst et al. 2017

Table 1. Personal and residential descriptive statistics of the highly-educated native Dutch population from a deprived parental neighbourhood (2000, 2006, and 2012)

	2000	2006	2012
Age Mean (<i>Std. dev.</i>)	21.02 (2.57)	27.01 (2.57)	33.01(2.57)
Share Males	42.07	42.07	42.07
Share students	59.99	11.71	.85
Share with children	1.30	20.33	55.47
Share primary income from benefits	5.16	8.03	11.59
Share primary income from work	94.84	91.97	88.41
Share fulltime work male ^a	-	62.17	78.25
Share fulltime work female	-	48.97	50.47
Income fulltime male (1 000 EUR)	-	29.08 (19.48)	49.59 (26.05)
Income fulltime female (1 000 EUR)	-	26.49 (11.35)	41.81 (17.04)
Income parttime male (1 000 EUR)	-	20.02 (11.69)	36.73 (23.81)
Income parttime female (1 000 EUR)	-	19.46 (10.36)	25.11 (14.69)
Average parttime hours male	-	.40 (.24)	.48 (.24)
Average parttime hours female	-	.49 (.22)	.59 (.19)
Housing tenure ^b			
Homeowner	45.17	55.79	70.33
Rent	54.81	43.92	29.37
Residential location			
4 biggest municipalities	18.33	20.83	21.25
35 following biggest municipalities	46.29	36.25	30.85
Other municipalities	35.38	42.93	47.90
Neighbourhood quintile 1	14.27	18.64	25.01
Neighbourhood quintile 2	13.73	18.00	19.64
Neighbourhood quintile 3	14.77	19.45	19.16
Neighbourhood quintile 4	17.48	19.64	18.75
Neighbourhood quintile 5	39.75	24.27	17.44
N	10 389	10 389	10 389

Note: unless otherwise indicated, values are reported in percentages. As some variables contain missing or unknown values, not all values will sum up to 100%

^aData on working hours available from 2001 onwards

^bThe homeowner category refers to the record of the building in the national housing registers, not the individual residing in it. Therefore, the homeowner category may include individuals who rent from a landlord/lady who did not officially declare their property to be let out to tenants

Table 2. Personal and residential descriptive statistics of the highly-educated non-western ethnic minority population from a deprived parental neighbourhood (2000, 2006, and 2012)

	2000	2006	2012
Age Mean (<i>Std. dev.</i>)	19.79(2.34)	25.78 (2.33)	31.78 (2.33)
Share Males	44.04	44.04	44.04
Ethnic background			
Moroccan	29.80	29.80	29.80
Turkish	32.66	32.66	32.66
Surinamese	15.50	15.50	15.50
Antillean/Aruban	3.46	3.46	3.46
Other non-western	18.58	18.58	18.58
Share students	67.95	16.11	1.92
Share with children	3.02	21.06	50.30
Share primary income from benefits	10.39	18.14	27.49
Share primary income from work	89.61	81.86	72.51
Share fulltime work male ^a	-	50.75	67.50
Share fulltime work female	-	44.83	57.23
Income fulltime male (1 000 EUR)	-	26.42 (12.39)	40.83 (22.91)
Income fulltime female (1 000 EUR)	-	24.53 (11.59)	37.51 (17.23)
Income parttime male (1 000 EUR)	-	20.72 (12.58)	32.09 (23.95)
Income parttime female (1 000 EUR)	-	19.99 (11.02)	25.42 (16.24)
Average parttime hours male	-	.39 (.23)	.47 (.25)
Average parttime hours female	-	.44 (.23)	.52 (.22)
Housing tenure ^b			
Homeowner	19.79	30.18	40.90
Rent	80.21	69.71	58.77
Residential location			
4 biggest municipalities	43.50	43.24	43.92
35 following biggest municipalities	32.34	32.24	30.30
Other municipalities	24.16	24.52	25.78
Neighbourhood quintile 1	8.19	8.74	13.52
Neighbourhood quintile 2	10.78	9.46	10.28
Neighbourhood quintile 3	11.76	14.35	12.04
Neighbourhood quintile 4	17.59	18.53	17.81
Neighbourhood quintile 5	51.68	48.93	46.34
N	1 819	1 819	1 819

Note: unless otherwise indicated, values are reported in percentages. As some variables contain missing or unknown values, not all values will sum up to 100%

^a Data on working hours available from 2001 onwards

^b The homeowner category refers to the record of the building in the national housing registers, not the individual residing in it. Therefore, the homeowner category may include individuals who rent from a landlord/lady who did not officially declare their property to be let out to tenants

Survey data

The Netherlands' Housing Survey 2012 (WoON hereafter) gathered unique information on the housing situation of the Dutch population, collecting information on housing desires and needs (Statistics Netherlands 2012). Core topics included the composition of the household and partner information, as well as assessments of the dwelling and neighbourhood, housings costs, and residential moves. The survey draws a sample from all non-institutionalised Dutch

individuals aged 18 and up that were registered with their municipality. From this group a sample was taken with a nationwide coverage of municipalities, and individual responses were gathered via the internet, telephone interviews, or personal interviews. All available data were linked to the Dutch register data at the individual-, household-, and address-level, which enabled a further link to basic registration/demographic characteristics (ibid.). A correction was applied to control for differences between the sample and the population, and a weighting factor was used based on age, gender, ethnic background, region, household income, value immovable property and survey period (ibid).

Selected survey questions

In this study we are primarily interested in assessments of neighbourhoods by both highly-educated native Dutch and ethnic minority individuals who grew up in deprived neighbourhoods. Any differences in the experience of poverty neighbourhoods between these two groups can shed light on whether there could be an element of choice to the fact that ethnic minority groups are more likely to live in similar residential neighbourhood to the ones they grew up in, regardless of their level of education. We selected two main questions from the WoON survey that focussed on the dwelling, and the living environment/neighbourhood of the individual household: 1. 'How happy are you with your current home/dwelling?', and 2. 'How happy are you with your current living environment/neighbourhood?'. Respondents were asked to select one of five possible answers: 1. Very happy, 2. Happy, 3. Not happy, but not unhappy either, 4. Unhappy, or 5. Very unhappy.

We additionally examined the outcomes on a number of statements on the residential neighbourhood, which respondents were asked to score in accordance with their agreement with the statement in question, coded: 1. Completely agree, 2. Agree, 3. Not agree, but not disagree either, 4. Disagree, or 5. Completely disagree. The statements included: 'The buildings in this neighbourhood are appealing', 'I am emotionally attached to this neighbourhood', 'I live in a nice neighbourhood with a strong community spirit', and 'I would move out of this neighbourhood if given the chance'.

Due to the fact that WoON consists of a sample, though be it a large one, there is only very limited overlap with the subpopulation we drew from the register data. For this reason, we take into consideration the full survey sample, and examine the experiences of individuals from different ethnic backgrounds, residing across neighbourhoods with different levels of poverty concentrations (same quintile definition applied). We compare the outcomes of individuals closest in age to our register data subgroup to those of older respondents in order to check for any obvious differences that may occur between age-groups. As the WoON does not include questions on parental neighbourhood characteristics, the discussion of these results concerns the current neighbourhood experiences of native Dutch and ethnic minority individuals; in either a deprived or more affluent neighbourhood; with a high educational attainment.

Results

Descriptive results

Previously found ethnic differences between the neighbourhood outcomes of highly-educated individuals from poor parental neighbourhoods (de Vuijst et al. 2017) could be related to differential income trajectories over time. In table 1, we clearly see that there are still large differences in socioeconomic outcomes between the highly educated native Dutch and those with a non-Western ethnic minority background. Average full-time and part-time incomes over time are much lower for ethnic minorities than they are for their native Dutch counterparts, and particularly prevalent among males. Regardless the fact that ethnic

minorities are on average two years older than the native Dutch during the measurement period this divergence is evident and could be due to a multitude of factors, ranging from different choices or options when it comes to the number of employment hours and differences in family formation patterns, to serious difficulties in job attainment or discrimination in work recruitment. These findings are in line with overall national statistics on the income position of ethnic minority groups in the Netherlands, thus suggesting that obtaining a higher education does not necessarily break the income gap between ethnic groups (Statline 2016). For both highly-educated groups, the differences in income between males and females, the latter continuing to earn less across the board, are most pronounced for the native Dutch, both in full-time and part-time occupation. For the women, the part-time income differences between ethnic groups appear to be the lowest, but considering the higher number of part-time working hours for women of a non-Western ethnic minority compared to their native Dutch counterparts, they still reveal income divergence.

Over time, we find that the percentage of individuals with a primary income from benefits is substantially higher for ethnic minority groups compared to their native Dutch counterparts: 27.5% compared to 11.6% in 2012. There could be a number of reasons for this. First, we find that in this highly-educated subgroup, individuals from ethnic minority groups have their first child at the average age of 26 compared to 29 for the native Dutch. This is in line with previous research which shows that on average individuals, particularly women, from an ethnic minority background display more traditional family formation patterns, earlier on in life. This transition into parenthood is naturally accompanied by child benefits provisions, and new parents, again mothers in particular, increasingly enter into part-time work thus further affecting income levels (ibid.). Second, the sum of benefits includes income from temporary unemployment benefits. Therefore, these percentages could additionally reflect potential difficulties in entering or staying active in the labour market for individuals from highly-educated non-Western ethnic minority groups compared to their Dutch counterparts.

With regard to the residential descriptives, we see that large percentages of highly-educated non-western ethnic minorities reside in the 4 biggest municipalities in the Netherlands (Amsterdam, Rotterdam, Den Haag, Utrecht). Furthermore, for these individuals, the percentages that reside in a quintile 5 neighbourhood, i.e. a deprived or concentrated poverty neighbourhood, are substantially higher than those for the highly-educated native Dutch: 46% compared to 17% in 2012. This is further reflected in the homeownership figures, which are higher for the native Dutch over the measurement period, likely due to the fact that the relatively poorer Dutch urban neighbourhoods are dominated by rented dwellings (75% of which is social rent in total (Statline 2014)). This subsequently entails that non-western ethnic minorities who are indeed concentrated in these poorer urban regions will commonly have less access to the privately owned housing stock.

Assessing these differences between both highly-educated groups over time, income divergence could be seen as a strong driving factor behind differences in residential outcomes, and thus potentially behind differences of educational attainment as a moderator of intergenerational neighbourhood patterns. It can simply be stated that a lower income leads to fewer options when it comes to one's residential location and therefore a higher probability to live in a deprived neighbourhood. However, in order to assess the relative importance of the income difference among the highly-educated, in determining neighbourhood outcomes over time, we have to try to differentiate between elements of necessity and choice.

Multilevel models

Besides the direct effect of individual income on the probability to live in a deprived neighbourhood, there might also be intergenerational effects. It is widely recognised that

poverty can be transferred across generations, and that socioeconomic outcomes can be transferred from parent to child over time, far into adulthood. Table 3 shows a multilevel mixed-effects linear regression model of individual income in the Netherlands up to 13 years after leaving the parental home. The results show that the income of children overall increases with the income of their parents over time. These results are in line with sociological literature which has shown that individuals born to poor parents often experience less socio-economic mobility throughout life in comparison to those from higher socio-economic classes (Blanden et al. 2005; Bloome 2014). Similarly, we find a significant negative effect of growing up in a deprived parental neighbourhood on individual income over time, which is strongest overall for native Dutch children with a lower education.

When comparing the outcomes between the groups, we find that the effect of parental income on the income of their offspring is stronger for children from a non-Western ethnic minority background, as opposed to their native Dutch counterparts. Within the former group, there are only moderate differences between the two levels of educational attainment, although the results show the highest coefficient on parental income for lower educated non-Western ethnic minorities. As stated, ethnic minorities have historically had lower incomes than the native population in the Netherlands, and income can be a strong determinant of individual residential outcomes. Therefore, a stronger intergenerational income continuity for highly-educated non-Western ethnic minority groups, compared to their Dutch counterparts, may substantially determine their residential location.

Survey results

The third potential explanation for previously found individual differences in moderation of intergenerational neighbourhood effects through higher educational attainment, focusses on the possibility that ethnic minority groups may be more likely to select similar residential neighbourhood to the ones they grew up in, compared to the native Dutch. We investigate this by analysing subjective observations on neighbourhood experiences from the WoON survey, and by investigating the presence of family members in the direct residential neighbourhood for both ethnic groups.

Our results do not show striking differences between native Dutch and non-Western minorities living in concentrated poverty areas. The level of contentment with the neighbourhood is generally high; over 80% for both groups, as is the rating of emotional attachment; 75% and over. Roughly 50% of individuals within each group thinks there is a strong community spirit within their residential neighbourhood, and rates of moving desires (if moving is possible) are similar; 27% for ethnic minorities, compared to 24% for native Dutch. Ethnic minorities are less content on average (68%) than the native Dutch (89%) with their current home/dwelling within deprived neighbourhoods. While the latter result may suggest different standards in rating the dwelling, further descriptives on our register data, and the national register data, clearly show segregated living environments, i.e. the deprived neighbourhoods in which ethnic minorities reside are not the same deprived neighbourhood in which the native Dutch reside. The same is true for more affluent neighbourhoods and their residents. We find that non-Western ethnic minorities who do not live in concentrated poverty still reside in neighbourhoods with substantially higher numbers of ethnic minorities and with a lower average neighbourhood-income compared to the native Dutch. Therefore, the results on contentment with the dwelling may indicate that ethnic minorities in poverty neighbourhoods are grouped within those neighbourhoods where the building standards are lower than those predominantly consisting of native Dutch.

As stated, the differences between the native Dutch and non-Western ethnic minorities residing in concentrated poverty areas are not resounding. However, when we compare results for these groups with their counterparts (same ethnic background) in other non-deprived

neighbourhoods, we do see certain differences. For the native Dutch, the level of contentment with the dwelling and the neighbourhood is even higher for individuals outside of concentrated poverty than it is for those within deprived neighbourhoods, 92% and 86% respectively. We furthermore see that individuals in more affluent neighbourhoods have a lower inclination to move if given the chance, only 11%, compared to 24% in deprived neighbourhoods. Finally, one of the biggest differences can be observed in the residents' emotional attachment to their neighbourhood. In concentrated poverty areas, the rates of attachment are substantially higher than those in more affluent residential neighbourhoods: 78% compared to 60%. This is however not further reflected in the outcomes on the survey question concerning community spirit, which only 49% of native Dutch individuals explicitly experienced, regardless of whether the neighbourhood was deprived or not.

Table 3. Multilevel models on intergenerational income transmission in the Netherlands after leaving the parental home (1999-2012), split up by ethnicity and education

	Native Dutch				Non-western ethnic minority			
	Low education		High education		Low education		High education	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Log income parents (1 000 EUR)	.055***	.002	.060***	.002	.122***	.007	.107***	.008
Male	.432***	.005	.167***	.004	.059***	.014	.087***	.015
Single	.138***	.002	.206***	.002	.163***	.006	.225***	.007
Student	-.881***	.004	-.698***	.003	-.618***	.009	-.462***	.009
Age	.038***	.000	.080***	.000	.052***	.001	.088***	.001
Parental neighbourhood Q2 (ref = Q1)	-.002	.008	-.005	.007	.015	.030	-.034	.029
Parental neighbourhood Q3	-.024**	.008	.009	.007	.036	.030	-.023	.029
Parental neighbourhood Q4	-.026***	.008	.007	.007	-.020	.028	-.049	.028
Parental neighbourhood Q5	-.077***	.008	-.015*	.007	-.026	.026	-.054*	.026
Parental neighbourhood in G4(ref=other)	-.067***	.010	-.061***	.010	-.027	-.027	-.038*	.018
Parental neighbourhood in G25	-.042***	.006	-.029***	.005	-.031	-.031	-.051**	.020
_cons	1.511***	.011	.629***	.012	.884***	.038	.241***	.043
<i>Random effects parameters</i>								
sd(_cons)	.527		.408		.646		.509	
sd(Residual)	.601		.642		.822		.784	
N	50 501		46 620		8 847		5 310	
N. obs	707 014		652 680		123 858		74 340	
Prob > chi ²	.0000		.0000		.0000		.0000	
Nagelkerke R ²	.202		.384		.126		.255	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

For non-Western ethnic minorities, the within-group differences for those in deprived and more affluent neighbourhoods are surprisingly similar to those of the native Dutch. The level of contentment with the dwelling is higher for the latter group than it is for the former;

73% compared to 68%, and the inclination to move is slightly lower; 23% versus 27%. Roughly 50% of individuals perceive a strong community spirit in the neighbourhood, regardless of the level of neighbourhood deprivation, and strongly comparable to the native Dutch; the level of emotional attachment is much higher in deprived neighbourhood than it is in more affluent neighbourhoods. The one clear discernible exception to these similarities between the native Dutch and non-Western ethnic minority research population is that the level of contentment with the neighbourhood is lower for non-western ethnic minorities in affluent neighbourhoods compared to those in deprived neighbourhood. For the native Dutch, all ratings of contentment were higher in more affluent neighbourhoods.

Individuals from either ethnic background category with a high educational attainment showed the same patterns with regard to neighbourhood and dwelling experiences, as discussed above on the entire research population within WoON. Additionally, splitting up the sample in age categories, those closest in age to our subpopulation from the Dutch register data, did not yield substantially different results to individuals of other subgroups. One minor difference could be discerned with the subgroup of older individuals, aged 50 and up, who scored slightly higher on levels of emotional attachment and rated community spirit. We further examined the non-Western ethnic minority respondents in accordance to their specific ethnic backgrounds, i.e. Moroccan, Turkish, Antillean/Aruban, and Surinamese, but found no considerable differences between these groups with regard to the contentment with their dwelling and residential neighbourhood, nor any of the other included survey questions.

A final analysis on the register data focusses on the presence of family members in the neighbourhood. The results show that highly-educated ethnic minorities from a deprived parental neighbourhood live in close proximity to their parents (within the same postcode area), slightly more often than their native Dutch counterparts: 18% compared to 15% in 2012. Combined however with the survey results showing a lower level of neighbourhood contentment for non-western ethnic minorities in affluent neighbourhoods compared to those in deprived neighbourhoods, this result does suggest an element of choice in neighbourhood selection.

Discussion

This study investigated three potential pathways which might contribute to our understanding of the fact that higher educated non-western ethnic minorities in the Netherlands are less likely to break through the intergenerational transmission of living in poverty neighbourhoods than natives.

Taking into consideration individuals' residential locations and socioeconomic outcomes over time, we were able to determine that highly-educated non-Western ethnic minorities from a deprived parental neighbourhood still have a substantially lower spendable income than highly-educated native Dutch from a similar background. While some of these differences were accounted for by the higher percentages of part-time work among the former, those working full-time still had a substantially lower average income compared to the latter. This outcome could in part explain why ethnic minorities are less likely to experience improvement of their residential environment over time. Additionally, we found that there is stronger intergenerational income continuity for highly-educated non-Western ethnic minorities, compared to the native Dutch, which may also explain why they experience less upward mobility in their neighbourhood environment than others, despite attaining higher education. The neighbourhood, in that sense, can be seen as the spatial dimension to intergenerational poverty transmission patterns, which suggest great difficulty in upward mobility for individuals who grew up in poverty (Blanden et al. 2005; Bloome 2014). These

findings could lead to the conclusion that higher educational attainment in one generation does not seem to break through years and years of disadvantage. However, as we pointed out in this study, elements of choice could also play a role in determining ethnic differences in neighbourhood outcomes.

By analysing subjective assessments of neighbourhood experiences gathered in the Netherlands' Housing Survey, and investigating whether there are direct family members in the residential environment, we explored if there might be elements of choice with regard to living in deprived neighbourhoods for non-Western ethnic minorities. We found no large differences in the assessment of poor neighbourhoods between native Dutch and non-Western minorities; the level of contentment with the neighbourhood is generally high. Furthermore, between different types of neighbourhoods, the rates of emotional attachment for both groups are notably higher in concentrated poverty areas than they are in more affluent residential neighbourhoods. However, we did find that the level of contentment and attachment with the neighbourhood is lower for non-Western ethnic minorities in *affluent* neighbourhoods compared to non-Western ethnic minorities in deprived neighbourhoods. This is a clear difference compared to the results of the native Dutch, where all ratings of contentment were higher in more affluent neighbourhoods.

Combined, the fact that native Dutch and non-Western ethnic minorities do not commonly reside in the same deprived neighbourhoods; the stronger emotional attachment of the latter group to their poorer neighbourhood environments; the fact that non-Western ethnic minorities *outside* of concentrated poverty still reside in neighbourhoods with substantially higher numbers of ethnic minorities; and the fact that presence of family members in the same residential area is more common for ethnic minorities, do suggest an element of choice with regard to the neighbourhood selection of higher educated ethnic minorities. If there is indeed a preference for a neighbourhood composition that reflects one's ethnic background, and neighbourhoods with high concentrations of non-Western ethnic minorities continue to be among the poorest in the Netherlands, this can be an important explanation for the fact that the likelihood for young non-Western ethnic minorities to reside in a deprived neighbourhood after leaving the parental home is substantially higher than that of native Dutch inhabitants, regardless of educational attainment level.

Due to the nature of our data, we are not able to fully examine all possible mechanisms behind intergenerational transmission of neighbourhood characteristics and residential patterns over time. In addition to the parent-to-child transfer of income-levels, explanations can range from complex processes such as social contagion; affected network ranges due to the composition of concentrated poverty areas; or a collective acceptance of certain norms and values which affect individual chances to participate in society and experience upward social mobility (for an extensive discussion see Galster 2012) (de Vuijst et al. 2017). Furthermore, while the additional survey data used in this study has definite benefits in comparison to past research, we continue to face some limitations with regard to both the income and neighbourhood selection explanations of the moderating power of education in breaking intergenerational neighbourhood patterns for non-Western ethnic minorities. For instance, an alternative explanation regarding the prevalent lower average income-levels for highly-educated non-Western ethnic minorities compared to native Dutch, could be that while both higher professional (HBO) and higher vocational (WO) education-levels are classed as 'higher education' in our accessible Dutch register data, non-Western ethnic minorities are overrepresented in the former while native Dutch are overrepresented in the latter (Statline 2017a; 2017b). Therefore, the types of higher educational attainment between these two groups are not necessarily the same, inevitably steering both groups in different labour market directions. While higher professional education is certainly not always associated with lower-income job opportunities, quite the contrary in some fields, it is still a

possible factor to consider. Another limitation is that with our design we cannot investigate the effects of discrimination, which likely plays an important role both in defining income-levels between ethnic groups in the Netherlands and in the possible neighbourhood selection of the individuals in this group. Therefore, the question remains whether individuals prefer a neighbourhood setting with more individuals from a similar ethnic background because they feel connected to them? Despite its level of neighbourhood deprivation. Or whether individuals prefer a neighbourhood setting with more individuals from a similar ethnic background because they feel connected to them, *but not* to other areas and groups in Dutch society: creating a buffer against negative sentiment outside of their respective ethnic groups? Future research into the possible role of everyday discrimination in determining residential location is needed to shed more light on this possibility, even though its role will be incredibly difficult to specify; likely differing per ethnic group, and even per individual within them. At any rate, it is positive that the levels of contentment and emotional attachment to the neighbourhood are generally high for highly-educated non-Western ethnic minorities in deprived neighbourhoods. Combined, to conclude, the results of this study show that there are multiple possible explanations behind lingering differences in neighbourhood outcomes for highly-educated individuals in the Netherlands along ethnicity lines. Additionally, the results reinforce the contribution that research on neighbourhood satisfaction and possible neighbourhood selection can make to the discussion on continuity of disadvantage over the life course.

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