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ABSTRACT

Economic Assimilation of the "Third Generation": An Intergenerational Mobility Perspective on Immigration and Integration*

This paper examines ethnic disparities in intergenerational economic mobility for the children of second-generation "migrants." Using rich register data for adult children aged 20 to 30, we provide empirical evidence on the economic assimilation outcomes of the descendants of immigrants who mainly arrived in the Netherlands in the post-World War II period. Acknowledging a high degree of diversity in the starting positions of immigrants associated with their dominant migration motives, we estimate the Dutch-migrant group gap in incomes from an intergenerational mobility perspective. Our descriptive rank-rank analysis reveals significant ethnic disparities in absolute and relative intergenerational income mobility. The absolute mobility of the ethnic groups we study appears to have the following rank order: Moroccan, Turkish Surinamese, Indish, German, and Dutch. While a higher level of intergenerational transmission of parental income narrows the gap for Turkish and Surinamese children, it widens the gap for Indish and Moroccan children. Our decomposition analysis shows that the ethnic disparities found for the Moroccan, Turkish, and Surinamese third generation are entirely explained by their relatively young ages and associated unfavorable socioeconomic positions, and by their lower parental income levels.

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1. Introduction

The social and economic integration of immigrants and their descendants has long been a topic of public debates in countries such as Australia, Canada, and the United States. Around the 2000s, such concerns became more prevalent in Western Europe as well, as evidenced by the rise of anti-immigration parties and the implementation of integrationist policies. A recurring theme in these debates is the existence of ethnic disparities in socioeconomic outcomes. Multiple studies have documented the relationship between immigrants from the former colonies, "guest workers," and refugees on the one hand, and immigrants from Northern countries and the majority population on the other (e.g., Fleischmann & Dronkers 2010; Algan et al. 2012; Yao and Van Ours 2015; Zorlu and Hartog 2012). These disparities may be driven by differences between the origin and the destination countries in terms of the educational system, income distribution, language, institutional structure, and geographical distance; as well as by the migration policies and institutional context. Moreover, it is often shown that immigrants from developing or war-torn countries and former colonies tend to lag behind the majority population in terms of educational levels, employment rates, and earnings. While their descendants typically do better, members of the so-called "second generation" also tend to lag behind socioeconomically, despite having been exposed to the same cultural values, educational system, and institutional context as their majority-descendent peers.

There are various explanations for this persistent lag, with discrimination by the host country and/or the deviant cultural values of non-European immigrant groups often being mentioned in integration debates (see Koopmans 2013; Bonjour and Duyvendak 2018). However, these disparities may also be attributed to the effects of intergenerational mobility, meaning that the transfer of the social, economic, and cultural capital of the parents structures the socioeconomic success of the children. Newly arrived immigrants who are relatively poor and have limited cultural knowledge will be less able to help their children achieve economic success in a modern economy in which social interactions and cultural norms are very important. However, after families have settled and lived in a country for multiple generations, these inequalities may vanish. Indeed, canonical intergenerational models of inequality have indicated that ethnic disparities in income are persistent in the long run only if these disparities do not fully arise from parental income differences (Becker and Tomes 1979). If there are no ethnic disparities in income conditional on parental income, these disparities may be expected to disappear in the long run. In other words, these disparities could fade away over time. The restraining effect of intergenerational transfers is implicitly recognized in classical assimilation theory (Alba and Nee 1997), which holds that immigrant families and groups experience a slow process of upward mobility over generations. As life in the home country and the event of immigration become more distant, each new generation may reach a more advanced stage of adjustment to the mainstream host society, and thus move toward economic assimilation, or integration. This reasoning suggests that a "third generation" may be expected to surpass their parents and grow closer to the majority population.

The main predictions of classical assimilation theory can be tested by applying an intergenerational perspective to the emerging third generation of post-war migrants in Western Europe. Little is known about the intergenerational transmission of favorable and unfavorable positions in the European context. The existing literature on assimilation is mainly limited to the second generation, and often fails to include the effect of intergenerational mobility. This study seeks to assess to what extent the grandchildren of immigrants have inherited the (dis)advantages of their parents, and the degree to

which the economic inequalities between ethnic and majority groups can be explained by (a lack of) intergenerational mobility.

To gauge the effects of intergenerational transfers on the economic success of the descendants of immigrants, our study compares the income levels of the grandchildren of immigrants and non-immigrants in the Netherlands ("third generation," aged 20-30), while taking into account parental income. This study relates the position of the third generation to the income of their parents, who represent the second generation. Their immigrant grandparents are not explicitly covered by our empirical analysis. We examine intergenerational mobility by looking at personal and household income levels, while making use of regression and decomposition analysis. We use data from the system of social statistical datasets (SSD), which is an integrated database of various registers provided by Statistics Netherlands (Bakker et al. 2014). Because "assimilation" processes may not be uniform or linear – or may even be irrelevant for some migrant groups – we distinguish between various ethnic origin groups. In terms of their employment rates and earnings, the positions of large migrant groups in the Netherlands may be ranked as follows from low to high: Moroccan, Turkish, Surinamese, and Western migrants (Zorlu 2016; Yao and Van Ours 2015; Zorlu and Hartog 2012; van Tubergen, Maas and Flap 2004). This study looks at adult children from the third generation of Moroccan-, Turkish-, and Surinamese-Dutch families. We also examine the income outcomes of the grandchildren of German and Indish migrants. The German migrants are arguably the most comparable to the Dutch because of the shared national border, and because of the linguistic and cultural similarities between the two groups. The Indish[1] migrants were born in colonial-era Indonesia, and represent the immigrant group with the longest history in the Netherlands in the post-war era. Finally, we also include a random selection of individuals with four Dutch native-born grandparents.

The remainder of the paper is structured as follows. We first discuss the relevant literature on intergenerational mobility in relation to migration and assimilation. Section 4 presents the conceptual framework used to evaluate intergenerational mobility. Section 5 describes our data and variables. In Section 6, group-specific patterns of intergenerational mobility are illustrated by the plotting of income ranks. Sections 7 and 8 present a regression analysis to predict personal income and a decomposition analysis to uncover the contributions of separate variables to ethnic disparities. Section 9 discusses the significance of our findings for questions of generational integration and inequality.

2. Intergenerational mobility, migration, and assimilation

It has long been recognized that an individual's socioeconomic status may be structured and determined by her or his family status, and that inequalities can reverberate through multiple generations (Mare 2011). This inherited status may come in the form of direct transfers of wealth and income (Henretta et al. 2018; Woodman 2020). However, sociological studies, often based on the writings of Pierre Bourdieu, have emphasized that intergenerational mobility is based on more than material transfers. Parents may engage in social reproduction through the transmission of values and norms, the organization of daily life, their efforts to expose their children to valuable social networks, their use of language, their modes of supervision and intervention, and their involvement in their children's formal and informal education (Lareau 1987; 2011). Indeed, in the U.S., family wealth is a strong predictor of educational attainment

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[1] Indish immigrants were a mix of European colonials, descendants of mixed marriages between Asians and Europeans ("Indo-Europeans"), and Asian subjects who had often served in the administration or armed forces. Many arrived in the Netherlands in the decade after the Indonesian declaration of independence in 1945.

(Pfeffer, 2018). Intergenerational transfers may also be related to demographic processes, as families influence the well-being of subsequent generations through assortative matching, differential fertility, and migration (Mare, 2011). In a geographical sense, parental wealth may broaden residential opportunities (Arundel 2017), which can, in turn, shape environmental factors in childhood (Hedman et al. 2015; Pais 2017) and in young adulthood (Hochstenbach & Boterman 2017; Manley et al. 2020).

Many low-skilled labor immigrants and former colonial subjects are engaged in low-income employment after their arrival in the host country. As most low-income immigrants make only modest gains, they often have few resources to transfer. Such financial hardships may also have negative effects on the school performance of their children (Antman 2011). In addition, regardless of their employment level, most immigrants are unfamiliar with the language, social norms, and institutional frameworks of the host country, and have limited local social networks (Pinkster 2009; Lancee 2010). While this lack of familiarity may be a barrier to upward intergenerational mobility, migrants may also transmit to their children values of collectivism ("conformity") and strong achievement (Nauck 2001).

In general, the barriers to the inclusion of immigrants are seen as temporary, and, thus, as mostly associated with the first generation and their children. Classical assimilation theory, which was originally applied to European migrants in the U.S., predicts that native-immigrant differences in socioeconomic outcomes decline from generation to generation as immigrant families adapt to the host society (Alba and Nee 1997). The existence of such an "obvious linear" set of assimilation outcomes has been disputed by a strand of the immigration literature that has pointed to downward mobility as a potential route for some migrant groups (Portes and Zhou 1993; Portes and Rumbaut 2001). Overall, little is known about the long-term effects of migration in the context of Western Europe. The existing literature on assimilation is mainly limited to the second generation, and does not extend to the grandchildren of migrants. Moreover, these studies often fail to include the effect of intergenerational transfers in their analyses. This study assesses ethnic disparities in income between the third generation and their native Dutch counterparts from an intergenerational perspective. The question for all groups is whether the grandchildren of migrants (third generation after migration) are closing the gap with their native Dutch peers, and to what extent any disparities that are found can be explained by the parents' socioeconomic position, rather than by ethnic affiliation.

2.1. Migrants in the Netherlands

In the Netherlands, most immigrants from developing countries are of low socioeconomic status (Zorlu 2016, Zorlu and Hartog 2012, 2018). An initial lack of productive skills and a tendency to adapt slowly to the host society have arguably led to a persistent ethnic gap among immigrants. This disadvantage has been passed on to members of the second generation, many of whom have improved their position, but have been unable to catch up to their native counterparts (Ali and Fokkema 2015, Van Ours and Veenman 2003, Crul and Doomernik 2003).

After World War II, a significant number of immigrants from the former Dutch colonies in Indonesia and Suriname arrived in the Netherlands. In the 1960s, "guest workers" from Turkey and Morocco were attracted by the availability of low-skilled jobs. In addition, a significant number of immigrants from neighboring Germany crossed the border, as the narrow cultural and linguistic distance between two countries made it easy for them to move to the Netherlands. Immigrants from the former colonies and the Mediterranean countries were disadvantaged in the labor market. These disadvantages have been empirically documented as a native-migrant gap in employment, job quality, and income (Zorlu and

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Hartog 2012, Zorlu 2016, Jongen et al. 2019). Ethnic disparities vary by the immigrants' country of origin and human capital endowment, and by the institutional context in the host country. Most immigrants from Turkey and Morocco are in a poor socioeconomic position, and while their children have made some gains, the second generation still appear to suffer from a substantial share of the disadvantages experienced by their parents (Van Ours and Veenman 2003). The children of immigrants from former Dutch colonies (Indonesia and Suriname) have been able to substantially improve their socioeconomic positions relative to those of their parents (Falcke, Meng and Nollenb2020). The question is whether the grandchildren of migrants with various migration histories and cultural backgrounds have caught up to their native Dutch counterparts, and whether there are any remaining disparities due to ethnic affiliation.

2.2. Analyzing intergenerational mobility

A straightforward way of measuring ethnic disparities in relative intergenerational mobility is to look at the positions of children in the income distribution based on their parents' income levels. We do so by using the joint income distribution of children and their parents in a manner similar to that of Chetty et al. (2019), who used income percentile ranks, rather than log incomes, to estimate the intergenerational income elasticity (IGE); i.e., the elasticity of the child's income with respect to the parents' income[2].

An established method of measuring relative intergenerational mobility is regressing child i's income percentile rank ($y_{i,t}$) on the parents' income percentile rank ($y_{i,t-1}$), in which t indexes generations. We assume that for migrant groups, the child's rank is a linear function of the parents' income rank. The following regression with a two-generation framework represents the intergenerational mobility of income for a migrant group m

$$y_{i,t} = \alpha_m + \beta_m y_{i,t-1} + \varepsilon_{i,t} \qquad\qquad \text{(eq 1)}$$

where $y_{i,t}$ is the income percentile rank of child i relative to that of other children in the same generation t, $y_{i,t-1}$ denotes the income percentile rank of child i's parents in the income distribution of the parents' generation ($t-1$), $m(i)$ denotes the migrant group of the family, and $\varepsilon_{i,t}$ denotes random errors with zero expectation $E[\varepsilon_{i,t}] = 0$ that is independent across generations. The intercept parameter α_m and slope parameter β_m denote the migrant group-specific rates of absolute and relative income rank mobilities. The intercept parameter α_m measures the absolute rank mobility for children of parents at the bottom of the income rank – i.e., $y_{i,t-1} = 0$ – while the slope parameter β_m measures the rate of relative mobility for children from a migrant group m. These parameters are bounded between zero and one by definition: $\alpha_m \in [0,1]$ [3] and $\beta_m \in [0,1]$. If the slope equals zero, $\beta = 0$, the income rank of the children is not affected by the parents' income. That means that children from both low- and high-income families end up in a similar position in the income distribution. If the slope parameter equals one, $\beta = 1$, the position of the children in the income distribution is the same as that of their parents, and, accordingly, there is no income mobility for children from low-income families. In other words, a lower slope parameter value refers to a higher degree of intergenerational mobility.

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[2] IGE is commonly estimated by regressing log child income ($log y_{i,t}$) on log parent income ($log y_{i,t-1}$).
[3] Empirical values of this parameter will be between zero and 100 in this paper since we use child and parent income in percentile ranks.

Chetty et al. (2019) have shown that the mean rank of children from migrant group m converges in the long run to a steady state (SS), assuming the absolute and relative parameters do not vary across generations. This steady state mean income rank is given on the bases of linear function (1) for migrant group m as

$$\bar{y}_{i,t} = \bar{y}_{i,t-1} = \bar{y}_r{}^{SS} = \frac{\alpha_m}{1-\beta_m} \qquad \text{(eq 2)}$$

The predicted mean income rank is positively related to the absolute and relative mobility parameters, α and β; the mean income rank is higher because these intercept and slope parameters are larger. In steady state (SS), the linear function (1) for migrant group m crosses the 45-degree line, which represents a perfect transmission of income; i.e., no income mobility. In other words, the percentile rank of the children and the parents in the income distribution are the same at the intersection point of the linear function and the 45-degree line. This intersection point represents a steady state outcome for migrant group m at which the mean rank of the children converges with the mean rank of the parents in the long run.

Essentially, the differences in the relative mobility parameter β_m between the Dutch and the migrant groups indicate the degree of convergence in incomes across migrant groups. A larger difference in the relative mobility parameter β between the Dutch and a migrant group widens the steady state gap given an intercept parameter, while a smaller β reduces the steady state gap in intergenerational mobility. The linear regression equation (1) is estimated in Section 4d for the Dutch group and separate migrant groups to illustrate the differences in the patterns of intergenerational mobility.

3. Data

Our empirical analysis uses the population registers data from Statistics Netherlands (CBS) from 2017 and 2018, which include population and tax registers. Second-generation migrants are identified on the basis of their parents' country of origin. Children from families in which at least one parent belongs to the second generation are characterized as belonging to the third generation. We distinguish between third-generation children from fully second-generation families (both parents are immigrants from the same country of origin) and those from ethnically mixed second-generation families (with a Dutch parent).

For this study, we focus on a data file of the children of the second generation; i.e., the third generation. Relevant characteristics of their parents and grandparents are taken into account as background variables of these third-generation "children." In addition, a 5% sample of Dutch individuals is used as a reference group. Since we are interested in income outcomes, we restrict our analysis data to a sample of (Dutch and third-generation) individuals aged 20 to 30 who are not co-residing with their parents. The use of age restrictions is important when conducting our comparative analysis, as the age distributions of the third generation vary across origin groups, with the third generation from the Moroccan and Turkish origin groups being relatively young. The number of third-generation children from the Moroccan and Turkish origin groups who are older than these ages is still very small, making it difficult to perform a meaningful statistical analysis.

4.1. Variables

Most variables are measured for two generations in our data: namely, for the children of the second generation and their parents.

Migrant (ethnic) origin

We distinguish six demographic groups: native Dutch (i.e., Netherlands-born grandparents) and five groups of the third generation: German, Indonesian (Indish), Surinamese, Turkish, and Moroccan. For some of our analyses, we split up the third-generation groups into two subgroups: "full third generation" (both parents are members of the second generation from the same country of origin) and "mixed third generation" (one native parent with two native Dutch parents). To be clear, these young adults are nearly all Netherlands-born Dutch citizens, and it is solely for the sake of clarity that our findings refer to them based on their grandparents' countries of origin.

Income and wealth

The data include three measures of income by percentile rank for the children and the parents: personal income, household income, and wealth. Personal income includes income from employment and self-employment, and disability and social security benefits (with the exception of child allowance and child budget). Premiums for disability benefits have been deducted from personal income. Household income refers to the standardized disposable income of the household. Another key variable is the wealth variable, which refers to the balance of assets and liabilities. The assets consist of financial assets (bank balances and securities), real estate, and business assets. The debts include mortgages for an owner-occupied home and consumer credit. This variable covers registered assets in the Netherlands, and does not cover any credit built up in savings or life mortgages, pension or annuity entitlements, or unregistered assets like jewelry of antiques (CBS)[4]. We use income in percentiles to evaluate relative intergenerational income mobility.

Socioeconomic Position (SEP)

The variable SEP is determined on the basis of each individual's main activities in a calendar year. SES is recoded as four categories: employee, self-employed, student, and other.

Educational level

Educational achievements include 18 categories defined according to ISCED-F 2013, with one being the lowest level and 18 being the highest level. Taking these categories as a proxy of years in education, we use this variable as a continuous variable. The variable is also used as four categories.

Household and spatial variables

There are several variables that reflect the household status and the social and built environment. The "household members" variable reflects the number of persons in the household. The "position in household" variable identifies the role of the individual. The "spatial distance" variable indicates the distance in kilometers from the parents' neighborhood. The "share of own group" variable measures the concentration of co-ethnics (first-generation immigrants) in the neighborhood. Lastly, the "urbanization degree" variable measures the degree of urbanization of the municipality, and is constructed based on address density. This variable has five levels: urbanized areas with 2,500 or more addresses per km^2; urbanized areas with 1,500 to 2,500 addresses per km^2; moderately urbanized areas with 1,000 to 1,500 addresses per km^2; less urbanized areas with 500 to 1,000 addresses per km^2; and non-urbanized areas with fewer than 500 addresses per km^2.

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[4] This variable does not cover illicit savings abroad.

4.2. Descriptive statistics

Table 1 lists the variables used in this study with their descriptive statistics. The sample includes individuals aged 20 to 30 who are not co-residing with their parents. For the children and the parents three measures of income percentile rank are given: personal income, household income, and wealth. The mean values of the children's income items are much lower than those of the parents. The lowest mean income item is wealth, at about 35 for the children and 63 for the parents. The highest mean income item is household income, at 46 for the children and 71 for the parents. The mean value of the personal income rank is about 43 for the children and for the parents. The mean age of the individuals in the sample is almost 26 years, and more than half of the respondents (54%) are women. The mean household size is 1.92 persons, and the mean education years is about 13 years on a scale of one to 18. About 67% of the respondents are employed, while 22% are in education. The average share of first-generation immigrants of the "own group" in the neighborhood is 25%. Most of our study population are residing in urbanized municipalities.

Table 1. Descriptive statistics of the third generation

		Mean	Std. Dev	min	ma
Income rank	Child income rank	43.20	26.24	1	100
	Child HH income rank	45.69	31.17	1	100
	Child wealth rank	34.93	25.15	1	100
	Parent income rank	77.05	21.33	1	100
	Parent HH income rank	71.32	25.54	1	100
	Parent wealth rank	63.15	28.44	1	100
	Grandparent wealth rank	64.49	24.10	1	100
	Non-parent	0.01	0.12	0	1
	Non-grandparent	0.28	0.45	0	1
Demographic	Age	25.92	2.90	20	30
	Woman	0.54	0.50	0	1
	Persons in household	1.92	2.78	1	16
Ethnic groups	Dutch	0.29	0.46	0	1
	German	0.18	0.39	0	1
	Indish	0.34	0.47	0	1
	Surinamese	0.02	0.13	0	1
	Turkish	0.002	0.04	0	1
	Moroccan	0.001	0.03	0	1
	Other	0.16	0.37	0	1
Education	Education (years)	11.13	3.81	1	18
SEP	Employed	0.62	0.49	0	1
	Self-employed	0.05	0.22	0	1
	Student	0.22	0.41	0	1
	Other	0.12	0.32	0	1
Neighborhood	Share of own group	25.21	33.31	0	100
Urbanization degree	Highly urbanized	0.39	0.49	0	1
	Urbanized	0.32	0.47	0	1
	Moderately urbanized	0.11	0.32	0	1

	Less urbanized	0.13	0.34	0	1
	Not urbanized (ref.)	0.04	0.21	0	1
	N	157397			

The income levels of the young adults are expected to be sensitive to age given the age distribution of our sample by ethnic group. Table 2 shows the mean ages of the children (i.e., the young adults of the third generation), the parents, and the grandparents by country of origin. The mean age of the third generation is 26 for the Dutch, German, and Indish children; 25 for the Surinamese children; and 24 for the Moroccan and Turkish children, who are the youngest groups. Accordingly, the parents of the Moroccan and Turkish third generation are also young, mainly under age 50; and most of their grandparents are between ages 70 and 75. The Dutch, German, and Indish subsamples have the oldest parents and grandparents: on average, their mothers are age 56, their fathers are two to three years older than their mothers, and their grandparents are between ages 80 and 81. Meanwhile, the Surinamese parents and grandparents are, on average, two to five years younger than the oldest group, but two to six years older than the youngest group.

Table 2. Mean age

				parents of mother	
	Child	Father	Mother	Grandfather	Grandmother
Dutch	26	58	56	81	81
German	26	59	56	80	80
Indish	26	58	56	81	81
Surinamese	25	56	52	77	75
Moroccan	24	49	46	75	70
Turkish	24	50	48	75	71

Figure 1 depicts the distribution of the children's personal income ranks (percentiles) by ethnic group. The Dutch (labeled "NLD") and German children are concentrated in the higher income percentiles, while the Moroccan, Turkish, and Surinamese children are heavily represented in the lower levels of the income distribution. We observe a concentration of almost all ethnic groups around the 15th percentile, but the density of this concentration is the highest for the Indish children and the lowest for the German and Dutch children. The density of the Moroccan, Turkish, and Surinamese children is much higher up to around the median income level (50th decile), after which the density of the German and Dutch children goes up.

Figure 1. Distribution of children's personal income percentiles by ethnic group.
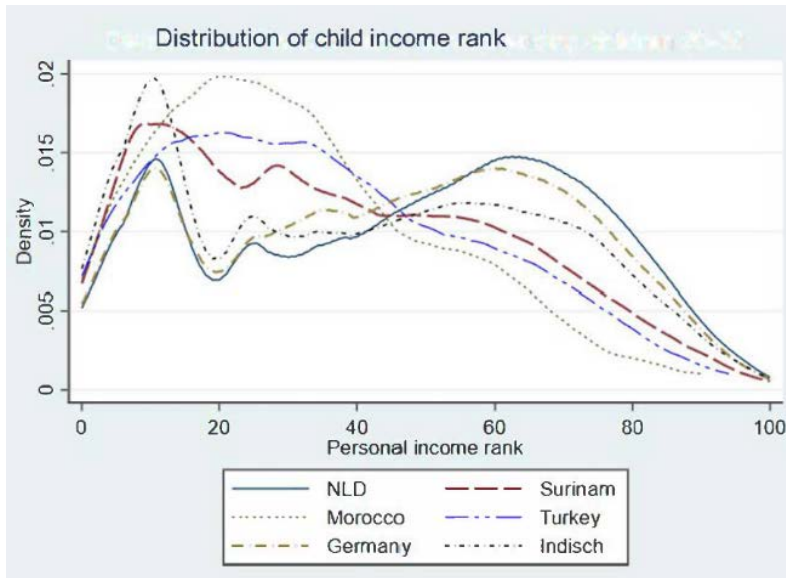
Distribution of child income rank

Figure 2 depicts the distribution of the children's personal income and the parents' household income with interquartile distances. As expected, the income distribution of the children is generally in lower percentiles than those of their parents. We do see some notable differences between and within groups. The interquartile distances of parental household income for the Dutch, German, and Indish groups even exceed the median. The median of the low-income groups (Moroccan and Turkish) is very close to the national income median. Interestingly, the interquartile part of the household income of the Moroccan and Turkish children overlaps with the second quartile (Q2) of the parents' household income. The differences between the children's and the parents' income levels are much smaller for these low-income groups. Indish children show a distinct pattern: i.e., their income is more dispersed, leaning toward lower levels, while the income distribution of their parents is similar to that of the Dutch parents. In sum, these figures already indicate that there are ethnic disparities in the income distribution of the parents and grandparents of the Moroccan, Turkish, Surinamese and Indish children relative to that of the "third-generation" Dutch.

Figure 2. Distribution of incomes across generations by ethnic group.
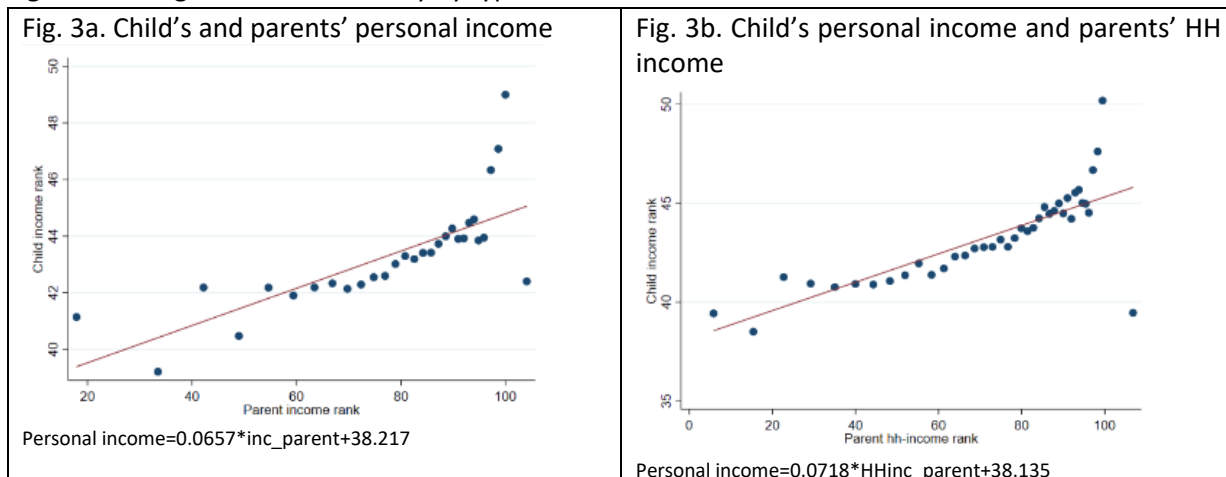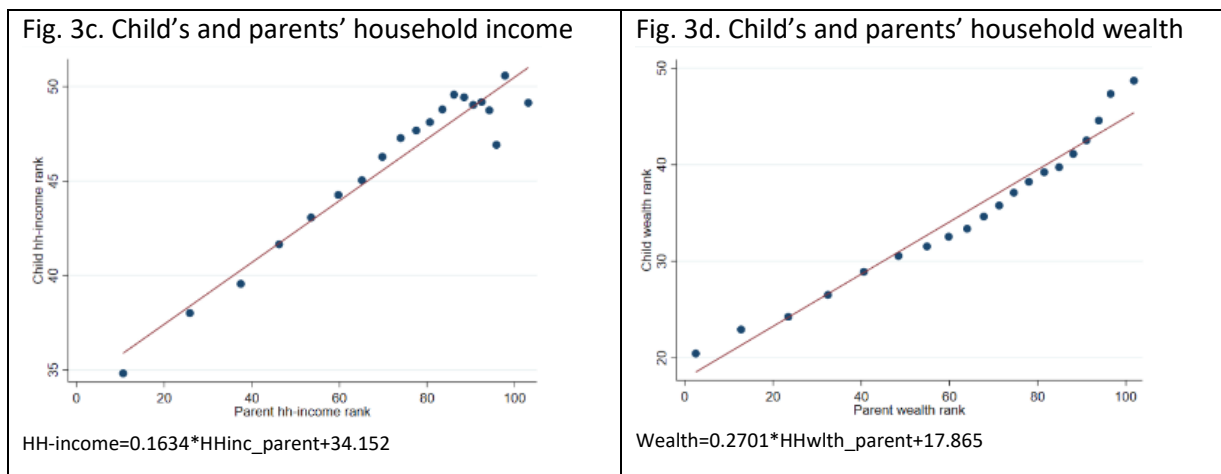
Fig 2a. Distribution of child personal income and parent HH income	Fig. 2b. Distribution of wealth across three generations

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4. Results of intergenerational income mobility

5.1. General pattern of intergenerational income mobility

We first present the rates of intergenerational mobility by relating the children's personal and household income to various forms of parental income and to parental wealth. The rates of intergenerational mobility are estimated by linear regression estimator, equation 1, on the binned series in order to facilitate an intuitive interpretation over the full income distribution, while also estimating the intercept and slope parameters. Given the age distribution of our sample, our estimations control for age and socioeconomic position (SEP). Figure 3 shows binned scatter plots, which indicate that the conditional expectation of the children's income rank given their parents' income rank, age, and SEP is almost linear. The fitted line is estimated with large standard errors in the upper percentiles, which implies that the correlation between the child's and the parents' income is less clear for the highest-income families. These errors are partly due to the small number of children at the higher end of the income distribution. Nevertheless, the fitted lines depict absolute (intercept) and relative (slope) mobility. The absolute mobility is around 38 percentiles for the child's personal income (Fig. 3a and 3b), 34 percentiles for the child's household income rank (Fig. 3c), and almost 18 percentiles for the child's wealth (Fig. 3d). Thus, the average personal income percentile is 38 when the parents' income is at the bottom of the income distribution. This level is quite high. The lower level of wealth mobility compared to income mobility is understandable when we consider the ages of our "children" (20-30 years). Wealth accumulation is long-term process, and is expected to be higher at older ages. Strikingly, the rate of relative mobility is high for the children's personal income (low slope parameter, about 0.07), while it is relatively low for the children's household income, and especially for the children's wealth (high slope parameters: 0.16 and 0.27). The relatively high slope parameters for household income and wealth imply that positive assortative matching keeps the children on the track of their parents, preventing intergenerational mobility.

Figure 3. Intergenerational mobility by type of income

Fig. 3a. Child's and parents' personal income	Fig. 3b. Child's personal income and parents' HH income
Personal income=0.0657*inc_parent+38.217	Personal income=0.0718*HHinc_parent+38.135

Fig. 3c. Child's and parents' household income	Fig. 3d. Child's and parents' household wealth
HH-income=0.1634*HHinc_parent+34.152	Wealth=0.2701*HHwlth_parent+17.865

5.2. Measuring absolute and relative mobility

To evaluate how rates of intergenerational mobility determine the evolution of ethnic disparities, we use the equation 1 Section 3, which allows us to summarize intergenerational mobility with the intercept (α) and slope parameters (β). We estimate these parameters using OLS regressions on the binned series, and plot the mean personal income rank of the children by the parents' household income rank by ethnic origin.

Figure 4 depicts the rates of intergenerational mobility by migrant group. In order to evaluate ethnic disparities in the rates of absolute and relative intergenerational mobility, each figure compares a migrant group with the Dutch sample. The intercept (α) is interpreted as absolute mobility, and gives the mean income rank of the children whose parents are at the bottom of the income distribution[5]. The slope (β) measures the rate of relative intergenerational mobility, and indicates the percentile increase in the children's income rank associated with a one-percentile increase of the parents' household income. Figure 4a shows the intergenerational mobility of the German and Dutch children. Absolute mobility is 2.027 percentiles lower for the Germans than for the Dutch due to the difference in intercepts ($\alpha_D - \alpha_G = 2.027$), while the relative mobility is slightly higher for the Germans than for the Dutch due to the difference in slopes ($\beta_D - \beta_G = -0.0117$). This higher relative mobility rate for the Germans reduces the gap, resulting in a steady state (SS) ethnic disparity of 1.662 percentiles. Figure 4b shows that the Indish children have lower absolute and relative mobility rates than the Dutch children; the associated gaps are 3.2223 ($= \alpha_D - \alpha_G$) percentiles and .0392 ($= \beta_D - \beta_G$) percentiles. This leads to a larger steady state (SS) gap of 5.167 percentiles. Figure 4c shows that the Surinamese have an absolute mobility gap of 11.679 percentiles, but their relative mobility is 0.0492 percentiles higher than that of the Dutch, which leads to a steady state gap of 10.9.14 percentiles. Figures 4d and 4e show that the largest gap in absolute mobility is among the Moroccans, at 15.235 deciles ($= \alpha_D - \alpha_M$); followed by among the Turks, at 11.121 ($= \alpha_D - \alpha_T$). The relative mobility of these groups is higher than that of the Dutch, resulting a gap of 0.0452 (=0.0798-0.125) for the Moroccans and of 0.0247 (=0.0798-0.1045) for

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[5] In the Appendix, we also present the results of an alternative measure of absolute income mobility similar to that used in Chetty et al. (2020): i.e., the probability of rising from the bottom quintile to the top quintile.

the Turks. The associated steady state gaps are then 11.119 deciles for the Turkish and 15.116 deciles for the Moroccan children.

Overall, these results reveal that the current ethnic disparities are primarily driven by intergenerational gaps rather than by transitory factors, such as temporary supports, as the magnitude of the ethnic gap is very similar to that of the gap in the steady state for all origin groups. This finding is comparable to findings for the U.S. by Chetty et al. (2019). Thus, it appears that ethnic disparities can be diminished by reducing intergenerational gaps; i.e., disparities between the income levels of children and their parents.

Figure 4. Ethnic differences in absolute and relative intergenerational mobility

(a) German versus Dutch
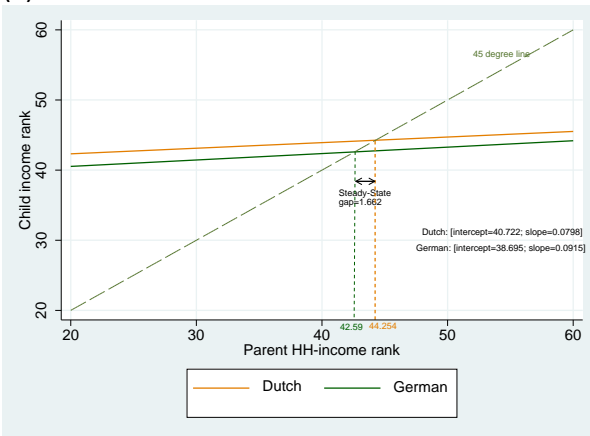
(b) Indish versus Dutch
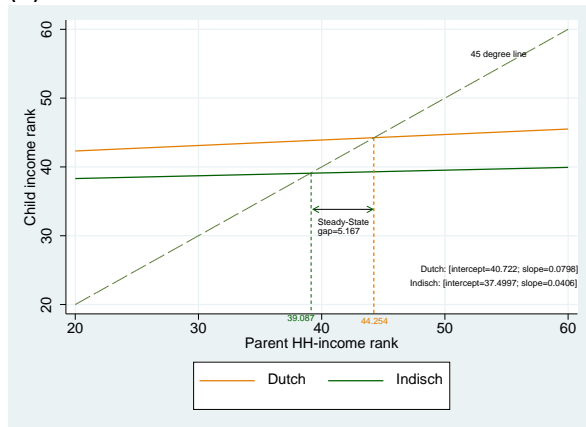
(c) Surinamesus versus Dutch

(d) Moroccan versus Dutch

(e) Turkish versus Dutch

5.3. Patterns of intergenerational mobility across the parental income distribution
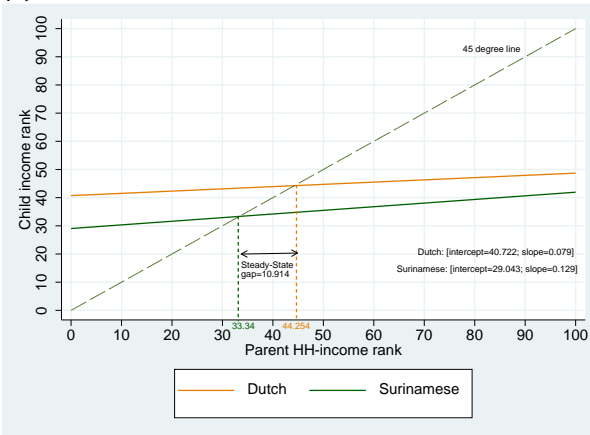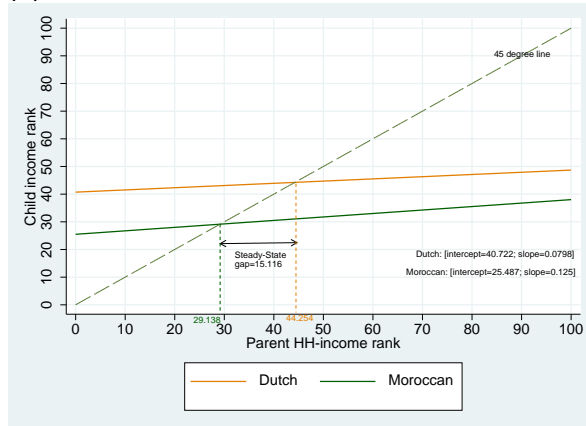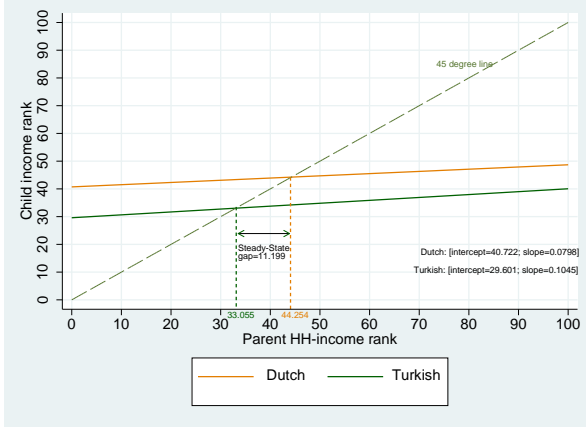
Our analyses have shown an average picture of average ethnic differences in intergenerational income mobility. However, the patterns of relative mobility may not be the same for every (household) income percentile and ethnic group. To account for potential nonlinearities in the relationship between the children's and the parents' incomes, we now examine patterns of intergenerational mobility in the children's income ranks across the full range of the parental household income/wealth distribution. In addition to the children's personal incomes, we also consider the children's household income and wealth ranks in order to create a more detailed picture of ethnic differences in intergenerational mobility.

We first estimate the following general specification, and predict the children's incomes over the parents' household income and household wealth.

$$y_{i,t} = \alpha + \beta_1 y_{i,t-1} + \beta_2 y_{i,t-1}^2 + \delta m_i + \pi\left(y_{i,t-1} * m_i\right) + \varepsilon_i \qquad \text{(eq 3)}$$

where $y_{i,t}$ denotes the child's income rank, $y_{i,t-1}$ denotes parental income, m_i indicates a vector of ethnic groups, and ε_i is a random error term. α, β, γ, δ, π are a vector of parameters to estimate. The quadratic term for the parents' income relaxes the linearity assumption for the effect of the parents' income, while the interaction of the parents' income with ethnic groups allows us to vary the effect of the parents' income by ethnic group. We estimate OLS models for three outcomes of the children: personal income, household income, and wealth. Since we are interested in ethnic differentials in the intergenerational mobility pattern, we first estimate regression models, but we do not present parameter estimates (available upon request). Instead, we predict the children's income outcome over the deciles of the parents' income outcome by the ethnic group, using the estimated parameters (β_1, β_2).

Using the equation (3), we estimate three separate models for the children's income outcomes: personal and household income percentiles and household wealth percentiles rank. We also predict the children's income outcomes by the parents' household income percentile rank. Figures 5a-5c represent the predicted average income outcomes for the children over the deciles of the parents' household income/wealth by ethnic group, given the control variables; i.e., the intergenerational mobility pattern. Figure 5a shows that the children's personal income increases with the parents' household income for all origin groups, although the rate of increase varies across the groups. The Dutch children have the

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highest personal income level, and it increases at a decreasing rate with the parents' household income. The German and Indish third generation have a small initial gap, but their pattern is different. The personal income level of the German children who are from a family at the top of the income distribution is almost 13 points higher than that of the German children who are from a family at the bottom of the income distribution. This difference is almost eight points for the Indish children, which is the smallest among the origin groups. The income development for the German children is similar to that for the Dutch. The Surinamese and Moroccan children start at the lowest income level, and thus below that of the Turkish children. However, the income level of the Surinamese children rises almost 17 points to reach the top parental income level, whereas the income level of the Moroccan children increases just eight points. Thus, the level of intergenerational mobility is clearly highest for the Surinamese. The mobility patterns of the Moroccan and Turkish children are quite similar, with an increase of about 12 points.

Figure 5b shows the impact of the parents' household income on the children's household income for different ethnic groups. It indicates that the patterns for the ethnic groups are similar, with an exception. The household income of the children increases with the parents' household income at a decreasing rate. The speed of the increase is the slowest for the Moroccan and Indish children, who see gains of around 19 and 21 points when their parents' income is at the top of the income distribution. The speed of the increase for the Turkish and Surinamese children is the fastest, at around 31 and 33 points, respectively. The level of mobility is clearly lower for the Moroccan children, particularly in higher deciles of the parental income distribution.

Figure 5c shows the impact of the parents' wealth on the children's wealth by ethnic group. Unlike for intergenerational (household) income mobility, wealth mobility increases with parental wealth at an increasing rate. Ethnic differences in wealth mobility are less pronounced. The wealth development pattern of the Dutch children is similar to that of the Moroccan children. A distinct pattern is observed for the Turkish children, whose wealth is strongly correlated with their parents' wealth. There is a 41-decile difference between the Turkish children from families in the lowest decile and the highest decile.

In summary, the contribution of the parents' income to the children's income is eight to 41 points when the outcomes of the children from the parents in the bottom and the top deciles of the income distribution are considered. Among those children whose parents are at the bottom of the income distribution, the Dutch children have the highest incomes and higher rates of upward mobility. The rates of intergenerational income mobility are the lowest for the Indish children, followed by for the Moroccan children. Personal income mobility is more pronounced for the Surinamese children, while the Turkish children benefit more from having high levels of parental household income and wealth.

Figure 5. Predicted personal and household incomes and wealth of children

Income mobility / HH-income mobility / Wealth mobility
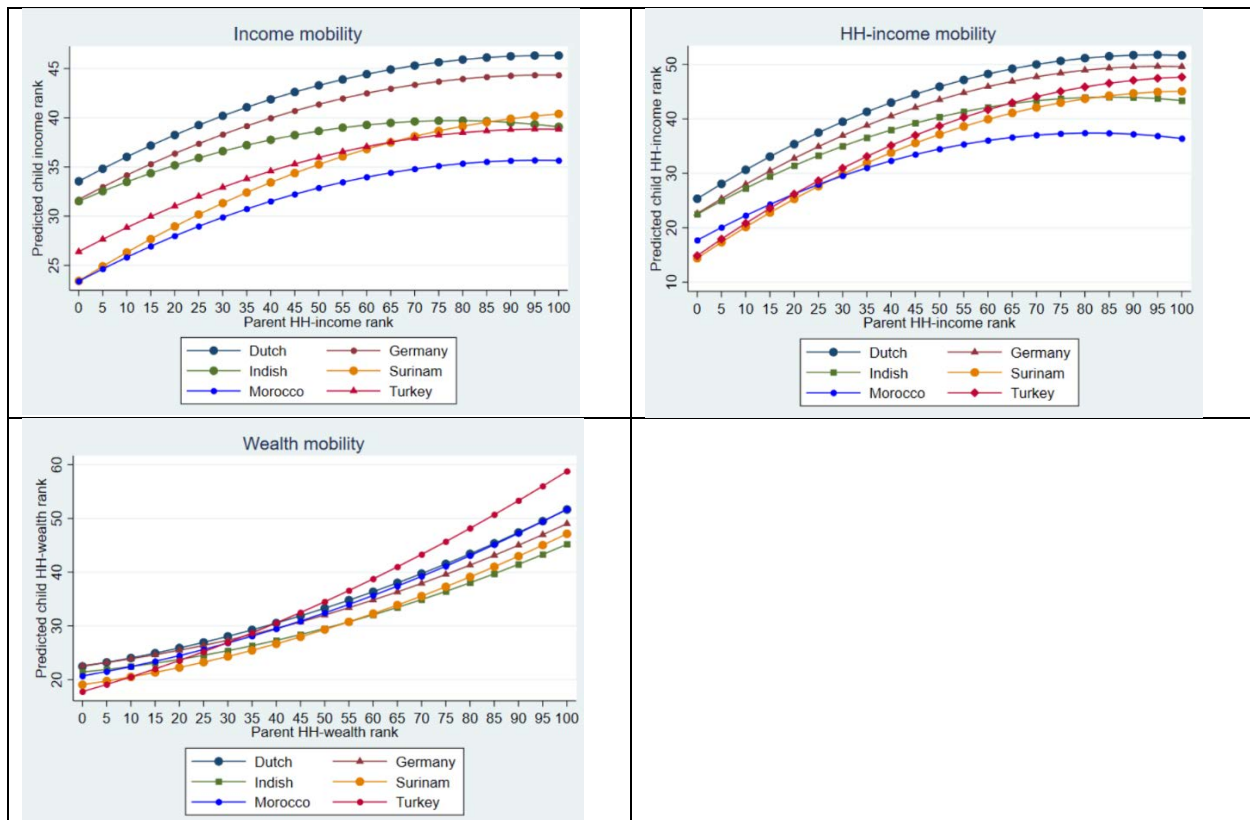
5.4. Explaining ethnic gap of income rank

In order to understand the effects of separate predictors on the Dutch-migrant gap in income rank, we estimate four regression models. The estimation results are presented in Table 3. The baseline model (equation I) includes only family origin and gender, and shows that the ethnic gaps in personal income rank relative to that of the children with native Dutch origins are similar to those found in the analysis of absolute mobility in Section 4. The largest gaps are detected for the Moroccan and Turkish children whose grandparents have a relatively short history in the Netherlands; followed by for the Surinamese and Indish children, whose grandparents' migration paths were shaped by Dutch colonial history. Most of these grandparents arrived after Indonesia (1945) and Suriname (1975) became independent, and are both former colonizers and subjects. Compared to other immigrants, their linguistic and cultural distance to Dutch society was relatively small. The smallest gap is found for the children of German families who are culturally and geographically close to the Dutch, and whose migration background is largely unrecognizable. Another striking result is that there are substantial differences between the children from mixed and non-mixed families within each migrant group. The mixed group is made up of children who come from a family in which one of the parents is of native Dutch origin. The difference is about three points for the Indish and Surinamese children, and is more than seven points for the Turkish and Moroccan children.

Model II adds two variables that capture the parental economic position: household income and wealth. Including these variables reduces the ethnic gap up to two points. The third model includes age, number of household members, educational level, and socioeconomic position. As expected, age, socioeconomic position, and educational level are powerful predictors of income. Controlling for these variables

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substantially reduces the ethnic origin gap for all groups. The gaps for the Indish and German children shrink considerably, but remain statistically significant. Surprisingly, the gaps for the Moroccan, Turkish, and Surinamese children are no longer significant. These results suggest that the differences in the income rank outcomes of these groups arise from their relatively young ages within our sample.

Model IV also includes spatial variables: fraction of co-migrant group in the neighborhood, logarithm of the distance to the parents' neighborhood, and the degree of urbanization of the municipality. Controlling for these spatial variables leads to a decline in the ethnic gap parameters of Model III. The estimated gap for the German and Indish children with mixed parents becomes insignificant, which is possibly driven by the correction for the concentration of Germans along the border, where income is relatively low. The share of own group in the neighborhood appears to have a significant positive effect on income rank, while living farther away from the parents is associated with a lower income rank. These additions lead to slight changes in the parameters of the Model III variables. The coefficients of the degree of urbanization show that the income rank is higher for the children in less and moderately urbanized areas. Further experimentation with these spatial variables indicates that the concentration of own group is mainly responsible for the decline in the ethnic gap, although this seems to have a modest positive effect on the income outcomes.

Table 3. OLS estimation of child personal income rank

	Model I	Model II	Model III	Model IV
Dutch (reference)				
German (mixed)	-1.492***	-1.074***	-0.625***	0.210
German	-4.609***	-4.003***	-1.486**	-0.657
Indish (mixed)	-5.947***	-5.871***	-1.477***	-0.646
Indish	-8.342***	-7.911***	-2.983***	-2.157***
Surinamese (mixed)	-9.286***	-8.240***	-0.151	0.654
Surinamese	-12.084***	-11.113***	-1.504	-0.719
Turkish (mixed)	-9.966***	-8.388***	0.841	1.653
Turkish	-18.573***	-16.644***	-1.866	-1.077
Moroccan (mixed)	-13.734***	-11.723***	-0.037	0.779
Moroccan	-20.353***	-18.578**	-4.254	-3.423
Other	-4.448***	-4.192***	-0.739***	-0.134
Women	-7.779***	-7.711***	-6.431**	-6.458***
Parent HH wealth rank		0.019***	0.007***	0.008***
Parent HH income rank		0.059***	0.042***	0.043***
Age			1.643***	1.631***
# Persons in household			-0.988***	-1.041***
Edu: low (reference)				
Edu: low-secondary			2.808***	2.806***
Edu: secondary			2.895***	3.217***
Edu: high			9.403***	9.835***
SEP: Employed (reference)				
SEP: benefit/idle			-23.652***	-23.596***
SEP: Student			-38.652***	-37.652***
Share of own group				0.012**
Log distance to parent				-0.204***

Urbanization: Highly urbanized				-0.428
Urbanization: Urbanized				0.372
Urbanization: Moderately urbanized				0.841***
Urbanization: Little urbanized				0.816***
Urbanization: Not urbanized (ref.)				
Constant	50.752***	45.241***	9.473***	10.253***
N	153313	153313	152877	152875
R-square	0.033	0.038	0.619	0.619

5.5.　Decomposition

To uncover the contribution of separate variables to the ethnic differential in the mean personal income rank, we use a standard Oaxaca-Blinder decomposition analysis (Jann, 2008). The native-migrant differential in the mean income rank (R) is given by

$$R = (\bar{y}_D - \bar{y}_m) \qquad\qquad \text{(eq 4)}$$

where $\bar{y}_D$ and $\bar{y}_m$ denote the mean income rank for the Dutch origin group and a migrant origin group; subscript D refers to the Dutch and, m indexes the third generation descending from the German, Indish, Surinamese, Moroccan, and Turkish migrant groups. This decomposition analysis uses separate regression models for ethnic origin groups to predict the income rank from the observed characteristics of individuals. Because income is measured in percentiles in the national income distribution, linear regression models are used for ethnic origin groups (subscript i indexing individuals is ignored for simplicity).

$$y_D = \beta_D x_D + \varepsilon_D \qquad\qquad \text{(eq 5)}$$

$$y_m = \beta_m x_m + \varepsilon_m \qquad\qquad \text{(eq 6)}$$

where x is a vector of characteristics determining the income rank of children and a constant; β is a vector of parameters to estimate; and ε is a random error term with zero expectation, $E[\varepsilon] = 0$. These equations include the identical variables as those listed in the extended Model IV in Table 5. The native-migrant gap in the mean income rank (R) is decomposed as

$$R = \hat{\beta}_D(\bar{x}_D - \bar{x}_m) - \bar{x}_m(\hat{\beta}_D - \hat{\beta}_m) \qquad\qquad \text{(eq 7)}$$

Where $\bar{x}_D$ and $\bar{x}_m$ denote the mean values of characteristics, and $\hat{\beta}_D$ and $\hat{\beta}_D$ denote the estimated parameters. The first term in the right-hand side, $\hat{\beta}_D(\bar{x}_D - \bar{x}_m)$ is the contribution of characteristics to the differential in the mean income ranks – i.e., the explained differentials – and the second term, $\bar{x}_m(\hat{\beta}_D - \hat{\beta}_m)$, gives the unexplained differentials.

5.6.　Decomposition results

Estimating the parameters underlying the OLS models for the Dutch and for the separate ethnic groups (equations 5 and 6), we decompose the mean incomes ranks into explained and unexplained parts as equation (7). Both parts are also attributed to the variables in the regression models. In fact, the

potential sources of a Dutch-migrant gap are identified and quantified in detail. The main decomposition results of personal income, household income, and household wealth are given in Tables 4, 5, and 6, respectively. We present the mean values, the difference in the means, the explained part together with the contribution of selected variables, and the unexplained part. The unexplained part is very small and is often statistically not significant, and it is negative for almost all groups. These findings suggest that the predictors can explain the Dutch-immigrant gaps we found, and that the difference is even in favor of the migrant groups – in particular of the Turkish children, for whom the unexplained difference (-2.71 points) is negative and significant.

Table 6 shows that the mean personal income rank of the Dutch children is 40.85. In general, the migrant origin groups have lower mean income ranks, varying from 26.47 for the Moroccans to 39.52 for the Germans, causing gaps of 1.33 for the Germans, 5.54 for the Indish, 10.23 for the Surinamese, 14.38 for the Moroccans, and 12.21 for the Turks. For nearly all of the migrant origin groups, these gaps are explained by the predictors. The most important explanatory variables are age, socioeconomic position (student and benefit/idle), and parents' household income and education. The large gap found for the Moroccan and Turkish children is attributable to the relatively young ages of these groups and their associated socioeconomic positions: i.e., many of these young adults are in education, and are not engaged in income-generating activities. Parental income accounts for 1.43 points of the gap for the Moroccans and 1.33 points of the gap for the Turks.

Table 4. Decomposition of child personal income percentiles.

	German		Indish		Surinam		Moroccan		Turkish	
	Estimat.	p	Estimat.	p	Estimat.	p	Estimat.	p	Estimat.	p
Dutch origin	40.85	0.00	40.85	0.00	40.85	0.00	40.85	0.00	40.85	0.00
Migrant origin	39.52	0.00	35.31	0.00	30.62	0.00	26.47	0.00	28.63	0.00
Difference (A+B)	1.33	0.00	5.54	0.00	10.23	0.00	14.38	0.00	12.21	0.00
Explained (A)[a] by	1.77	0.00	4.74	0.00	10.98	0.00	15.94	0.00	14.92	0.00
Parent HH inc	0.38	0.00	0.07	0.00	0.84	0.00	1.43	0.00	1.33	0.00
Age	-0.44	0.00	0.43	0.00	2.00	0.00	4.22	0.00	3.95	0.00
Education	0.25	0.00	-0.01	0.48	0.81	0.00	1.68	0.00	1.75	0.00
SEP student	-0.35	0.00	2.04	0.00	3.73	0.00	4.44	0.00	3.49	0.00
SEP benefit /idle	0.93	0.00	0.66	0.00	1.39	0.00	2.13	0.00	2.01	0.00
Unexplained (B)[b]	-0.44	0.30	0.80	0.05	-0.76	0.10	-1.56	0.12	-2.71	0.00

[a] The regression models include the same variables as Model IV in Table 5 in Section 4e, but only the results for the selected influential variables are displayed.

[b] Since the unexplained component is extremely small, the estimated results for separate variables are not presented.

Table 7 indicates that the mean household income rank of the Dutch children is very close to the median, at 49.92. As in the case of the gap in the personal income ranks, the migrant groups have lower mean household income ranks. The largest differences are observed for the Moroccans, at 18.46; for the Turks, at 12.71; and for the Surinamese, at 11.16. Almost all of these differences are explained by the

parents' income, age, education, and socioeconomic position. Only a small part of these differences remain significantly unexplained for the Germans (0.79) and the Indish (1.94).

Table 5. Decomposition of child household income percentiles.

	German		Indish		Surinam		Moroccan		Turkish	
	Estimat.	p	Estimat.	p	Estimat.	p	Estimat.	p	Estimat.	p
Dutch origin	49.92	0.00	49.92	0.00	49.92	0.00	49.92	0.00	49.92	0.00
Migrant origin	47.15	0.00	42.89	0.00	38.76	0.00	31.46	0.00	37.21	0.00
Difference (A+B)	2.78	0.00	7.03	0.00	11.16	0.00	18.46	0.00	12.71	0.00
Explained (A)ᵃ by	1.98	0.00	5.09	0.00	10.26	0.00	14.84	0.00	13.22	0.00
Parent HH-wealth	0.82	0.00	-0.07	0.01	1.74	0.00	3.86	0.00	3.22	0.00
Age	-0.04	0.00	0.18	0.00	0.45	0.00	0.95	0.00	0.80	0.00
Education	0.48	0.00	-0.05	0.05	1.38	0.00	3.62	0.00	3.32	0.00
SEP-Student	-0.30	0.00	2.61	0.00	3.41	0.00	2.50	0.04	1.66	0.06
SEP-other	1.05	0.00	0.72	0.00	1.75	0.00	3.89	0.00	4.14	0.00
Unexplained (B)ᵇ	0.79	0.00	1.94	0.00	0.90	0.09	3.62	0.07	-0.51	0.73

[a] The regression models include the same variables as Model IV in Table 3 in Section 4e, but only the results for the selected influential variables are displayed.
[b] Since the unexplained component is extremely small, the estimated results for the separate variables are not presented.

The ethnic gap in wealth differences has a pattern similar to that of the household income, but it is smaller for most of the migrant groups, except for the Germans. A large part of the gap is explained by the similar variables. Strikingly, the parental wealth variable explains a substantial part of the gap. This is an indication of a strong correlation between the wealth of the children and the parents, and, correspondingly, of a substantial intergenerational transmission of wealth. This holds in particular for the Turkish and Moroccan families.

Table 6. Decomposition of child wealth percentiles.

	German		Indish		Surinam		Moroccan		Turkish	
	Estimat.	p	Estimat.	p	Estimat.	p	Estimat.	p	Estimat.	p
Dutch origin	38.39	0.00	38.39	0.00	38.39	0.00	38.39	0.00	38.39	0.00
Migrant origin	34.89	0.00	32.54	0.00	28.53	0.00	28.25	0.00	29.95	0.00
Difference	3.49	0.00	5.84	0.00	9.86	0.00	10.13	0.00	8.43	0.00
Explained (A)ᵃ by	2.20	0.00	3.85	0.00	7.50	0.00	8.85	0.00	7.26	0.00
Parent HH wealth	1.85	0.00	1.49	0.00	5.58	0.00	9.35	0.00	7.71	0.00
Age	0.12	0.00	-0.49	0.00	-1.25	0.00	-2.64	0.00	-2.23	0.00
Education	0.02	0.15	0.00	0.24	0.07	0.15	0.18	0.15	0.17	0.15
SEP student	-0.08	0.00	0.67	0.00	0.89	0.00	0.78	0.01	0.49	0.03
SEP other	0.24	0.00	0.16	0.00	0.42	0.00	0.84	0.00	0.93	0.00

Unexplained (B)[b]	1.30	*0.00*	1.99	*0.00*	2.35	*0.00*	1.28	*0.38*	1.18	*0.31*

[a] The regression models include the same variables as Model IV in Table 5 in Section 4e, but only the results for the selected influential variables are displayed.

[b] Since the unexplained component is extremely small, the estimated results for separate variables are not presented.

6.   Conclusions

The aim of this paper was to evaluate the economic progress of third-generation "migrants" from an intergenerational perspective using register data. Our study mainly used three measures of income for the children and their parents: personal income, household income, and wealth covering income earned from most potential sources collected by tax records. We used percentile ranks of income for the children and their parents, and estimated a rank-rank specification with an approach similar to that of Chetty et al. (2020). This approach enabled us to measure absolute and relative mobility, and to uncover ethnic disparities in intergenerational mobility.

First, we conducted a primary rank-rank analysis, which showed that there are significant disparities in absolute and relative income mobility among migrants of different ethnic groups relative to young adults with Dutch grandparents. The largest disparities were found for the Moroccan children, followed by for the Turkish, Surinamese, Indish, and German children. This rank order was shown to be robust to alternative measures of income, and confirmed the findings earlier studies, while also echoing perceptions expressed in the public debate. The analyses revealed that there are relatively high rates of intergenerational transmission of income among the Turkish and Surinamese children. By contrast, the Indish and Moroccan children born to high-income parents were found to benefit less from parental affluence.

Subsequently, we examined ethnic disparities using linear regression models. This analysis showed that the sizeable income disparities observed in particular for the Moroccan, Turkish, and Surinamese third generation vanished when the estimations were controlled for age and socioeconomic position, signifying the relatively young ages of these groups. Strikingly, the gap for the children with two parents with an Indish migration background was found to be robust to differences in age and socioeconomic position. This finding may be related to a large group of individuals of Moluccan descent who live in highly concentrated neighborhoods, and have detrimental socioeconomic outcomes (Özer et al. 2017).

Lastly, to uncover the contribution of parental income to these ethnic disparities, a decomposition analysis was conducted for three measures of incomes. These analyses revealed that for almost all groups, ethnic disparities in mean personal income ranks are fully explained by age, education, and parental household income and socioeconomic position. A small difference (up to two percentiles) remains unexplained by the variables we used only for the Indish, Surinamese, and German children. A difference of a similar order in household wealth is unexplained for the same origin groups. This outcome contradicts the common assumption that the assimilation of migrant communities is primarily shaped by (religious) cultural distance from the host society and by migration motives (see Bonjour & Duyvendak 2018). Descendants of immigrants from a neighboring country (Germany) and the former colonies (Indonesia and Suriname) appear to have lower income levels, despite their linguistic, religious,

and cultural similarities to the Dutch. On the other hand, our results indicated that the children of Moroccan and Turkish origin have achieved income parity with the native Dutch after controlling for the main individual and parental socioeconomic characteristics, even though their (grand)parents are perceived as being the least successful migrant groups due to their unfavorable cultural backgrounds and starting positions as unskilled "guest workers." The observed differences in levels of economic assimilation over the long run are likely caused by group-specific factors, such as geographical distribution, family migration history, demographic structure, and other factors that shape the motivation to achieve, rather than by supposed group disadvantages, religious beliefs, and sociocultural distance from the host society.

Thus, this study has presented novel empirical evidence that the ethnic disparities in income among Dutch citizens born to second-generation migrant parents from various immigrant groups are fading; and, as such, provides us with insight into how post-war migrant groups are faring in Europe. The ethnic differences in income we observed are fully explained by differences in age and socioeconomic position. These findings confirm the main predictions of classical assimilation theory, and, in particular, the prediction that migrants will undergo a process of structural assimilation. It is striking, however, that the grandchildren of German and Indish immigrants – groups with a longer history in the Netherlands – have not fully caught up to their Dutch peers, despite their linguistic, sociocultural, and phenotypical similarities with their Dutch counterparts. Moreover, we observed different trajectories in how parents and children relate to each other socioeconomically. The differences we found indicate that ethnic disparities are primarily driven by intergenerational gaps, which point to historical sources of ethnic disparities. We need to look for further explanations for delayed processes of economic assimilation. For example, a stronger intergenerational transmission for households appears to indicate that there is a stratification through assortative matching in household formation (see Mare 2011). The formation of socially and ethnically mixed households may be an influential mechanism for eliminating intergenerational gaps.

Our findings also show that the still rather young members of the "third generation" of migrant families we studied reach parity with their Dutch counterparts when we control for socioeconomic conditions. Our explanation for the ethnic disparities we found is that unobserved factors, such as discrimination or cultural bias, play a negligible role in determining the income rank of the children in our sample. However, members of the third generation with a migration background may still be confronted by bias and discrimination in the fields of employment and education, factors that we treated as controlling variables (see Thijssen et al. 2019). The importance of these factors in explaining the differences may imply that the grandchildren still bear the "costs of migration." However, a more optimist view is that the inequalities we found seem to resolve over generations, and may be resolved more quickly by providing support to ensure that the children of migrants have equal access to education and labor markets.

7. References

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Appendix

Absolute mobility

To compare the intergenerational mobility of different origin groups, we examine the income outcomes of children from families of a given income level (absolute mobility). A measure of absolute income mobility is the probability of rising from the bottom quintile to the top quintile, in a 5x5 quintile transition matrix, and vice versa. We only look at the transitions between the top and the bottom quintiles, as this gives us a robust indication of the intergenerational mobility patterns. Upward mobility is a valuable indicator of the economic mobility of the children of second-generation migrants who are in the bottom quintile of the national income distribution. Alternatively, downward income mobility may occur when the children of families in the top quintile end up in the bottom quintile. The evidence of downward mobility should be interpreted with caution, as the children in our sample are still under age 30, and their socioeconomic potential has not fully developed.

Table 3 shows the transition matrix between the bottom and the top quintiles for members of the third generation from various origin groups. The first line reports the percentage of children from the lowest-income families that remain in the same income quintile. Almost half of the Turkish and Moroccan children, 31% of the Surinamese children, and about 11% of the Dutch and German children have not experienced any upward mobility. The second line shows that less than 10% of the Turkish and Moroccan children have experienced upward mobility, compared to about 39% of the German and 37% of the Dutch children. The Indish and Surinamese children have moderate rates of 27% and 18%, respectively. The third line reports the percentage of children from families with income in the top quartile who are in the bottom income quintile. About half of the Turkish and Moroccan children and one-third of the Indish, Surinamese, and Dutch children have experienced downward mobility. These relatively high percentages may be driven by the age range of our sample (20-30), and the high

concentration of Turkish and Moroccan children at the lower end of the age distribution. The fifth line reports the share of children from high-income families who maintain the position of their parents. The children in this group have been successful in reaching the top quintile, despite their young age. Again, substantial differences between the groups can be seen: about 37% of the German, 29% of the Dutch, 26% of the Indish, and 10% of the Moroccan and Turkish children are in the top quintile.

These results show that about half of the Turkish and Moroccan children are in the bottom quintile, regardless of their parents' position. At the other extreme, the Dutch and German children are the most likely to have experienced upward mobility. For the probability of experiencing upward mobility, the origin groups may be ranked from low to high as follows: Turkish, Moroccan, Surinamese, Indish, German, and Dutch children.

Table 3. Transition matrix of income mobility between or within the lowest (Q1) and the highest quintiles (Q5) based on the personal income of the child and the parents, for third-generation origin groups.

	Dutch	German	Indish	Surinam	Moroccan	Turkish
Pr(Child in Q1 | Parent in Q1)	11.05%	10.79%	15.40%	31.03%	47.32%	45.45%
Pr(Child in Q5 | Parent in Q1)	37.49%	39.37%	26.91%	17.88%	9.82%	9.55%
Pr{Child in Q1 | Parent in Q5)	31.15%	24.49%	35.24%	31.21%	49.11%	49.83%
Pr(Child in Q5 | Parent in Q5)	29.27%	36.88%	25.92%	22.24%	10.27%	9.66%
Mean percentile rank	46	45	40	37	31	35

A similar picture of ethnic disparities in intergenerational mobility emerges when we look at the economic positions of children born to low-income parents. Table 4 presents ethnic disparities in the mean income and wealth ranks of children born to parents in the 25th percentile of the respective distribution. Generally, the ethnic disparities are largest for household income and smallest for household wealth. The largest disparity is observed for the Moroccan children, whose mean personal and household incomes are, respectively, almost 15 and 18 percentiles lower than those of their Dutch counterparts. On average, the Moroccan children only reach the 27th percentile of personal income and the 20th percentile of household income, whereas the Dutch children reach the 42nd percentile of personal income and the 38th percentile of household income. The disparities in mean personal and household income are slightly smaller for the Turkish and Surinamese children, at about 10 and 13 percentiles, respectively; and are even smaller for the Indish children, at four and six percentiles, respectively. On average, the German children reach the 40th and the 35th percentiles of personal and household income, respectively, and thus approach the values of their Dutch counterparts, with differences of about two to three percentiles. The ethnic disparities in household wealth are relatively small for the Moroccan, Turkish, and Surinamese children, at about seven to eight percentiles. These results indicate that the ethnic hierarchy in intergenerational income mobility is similar to the one discussed above; with the groups ranked from low to high as follows: Moroccans, Turks, Surinamese, Indish, Germans, and Dutch. However, large parts of the income differences are driven by age differences between the groups and the associated socioeconomic positions of children with a migration background.

Table 4. Mean income and wealth rank of children with parents in the 25th percentile by ethnic origin

	Personal Income	HH income	HH wealth
Dutch	42.2	37.6	31.6
German	40.3	34.6	28.6
Indish	37.8	31.7	27.7
Surinamese	31.3	25.2	23.3
Moroccan	27.4	19.9	23.2
Turkish	31.8	24.4	24.3