

The long-term integration of non-Western immigrants in Europe: Evidence from the third generation

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Abstract

I investigate the long-term integration of non-Western immigrants in Europe, with a particular focus on the third generation. Using Dutch administrative data, I highlight a divergence between cultural and educational integration. While educational disparities persist across generations, there is notable cultural convergence between third-generation immigrants and native populations. Similar patterns are observed in French survey data. I find suggestive evidence that the persistence of educational inequalities may be partially influenced by negative teacher bias against third-generation immigrants. Additionally, there is suggestive evidence that the observed cultural convergence could be related to a greater openness among third-generation immigrants to mainstream culture and peer influence compared to their second-generation counterparts.

JEL Codes: J15, J62, R23, J71, Z12

Keywords: Immigrants, Cultural integration, Educational inequalities, Discrimination, Peer Effect

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1 Introduction

The issue of immigrant integration has fueled heated public debates in Europe, where identity-related tensions have crystallized over the fate of immigrants from non-Western backgrounds (Bansak et al., 2016; Adida et al., 2014a; Tabellini, 2020; Alesina and Tabellini, 2024; Drouhot and Nee, 2019). This debate encompasses two related but distinct aspects: economic integration and cultural integration.¹ To provide empirical evidence on long-term integration along these two dimensions, I focus on the situation of the grandchildren of immigrants.

Being the grandchild of an immigrant, rather than the child, is more than just a mechanical difference; it also reflects a deeper, qualitative change. While the second generation is caught between the heritage of their parents and the culture of the host country, the third generation is more firmly rooted in the destination country. This is why research in social sciences has focused heavily on the grandchildren of immigrants (Alba and Nee, 1997; Gans, 1992; Jiménez et al., 2018). If there are nonlinearities in the integration process between the second and third generations, prolonging the evidence observed for the second generation to the third may be misleading. Therefore, observing differences between second-generation immigrants and natives does not preclude the possibility that further generations will converge with natives.

This is particularly relevant at present as the grandchildren of low-skilled migrants who arrived in Europe during the post-war period are coming of age. Although the population of third-generation immigrants is young - on average 9 years old in the Netherlands - a significant proportion has reached adolescence. With appropriate data sources, it is possible to observe relevant outcomes related to cultural integration and educational attainment. Dutch administrative registries provide extensive coverage, both in terms of sample size and availability of data on relevant outcome variables.

For educational attainment, the Dutch school system, with its multiple tracks starting after primary school at age 12, provides early indicators of labor market prospects. For cultural outcomes, this paper focuses on a culturally charged consumption observed in administrative records, namely the use of hormonal contraception (Achard, 2022). Following the sexual revolution of the 1960s, Western perspectives on female premarital sexuality liberalized, as exemplified by the widespread use of hormonal contraception among young women (Goldin and Katz, 2002; Bailey, 2006). In contrast, more conservative gender

¹In this paper, I use the terms “cultural assimilation” and “cultural integration” interchangeably. I define them as adopting a behavior typical of natives. I use these terms purely for convenience and do not intend to make any normative statements.

norms persist in many non-Western countries and among many immigrant communities (Algan et al., 2013; Adida et al., 2014b). In the Netherlands, hormonal contraceptives require a prescription, allowing their use to be tracked in administrative health records.² To supplement this measure, I also look at the likelihood of marrying a native.

To complement the analysis on the Netherlands and provide evidence on external validity, I use French survey data on second and third generation immigrants. In particular, I use information on educational attainment and first names as measures of economic and cultural integration. Since first names can be classified as native-sounding or foreign-sounding, they are commonly used as a measure of cultural assimilation (Fryer and Levitt, 2004; Bertrand and Mullainathan, 2004; Abramitzky et al., 2020).

Comparing the Netherlands and France is particularly relevant since the two countries have different philosophies on integrating immigrants. The Netherlands has traditionally embraced multiculturalism, allowing immigrants to preserve their cultural heritage. In contrast, France has favored an assimilationist approach, viewing the development of autonomous immigrant communities separate from the native mainstream with skepticism (Givens, 2007; Lutz, 2017). Despite these differences, both countries have experienced a similar rise in far-right, anti-immigrant political movements.³ Is the long-term success of immigrant integration primarily determined by the length of time spent in the destination country rather than by integration policies?

The paper starts with a substantial amount of descriptive evidence comparing third-generation immigrants with second-generation immigrants and natives. It shows significant convergence in cultural outcomes. For instance, the use of hormonal contraception at age 16 is the same between native teenagers and third-generation immigrants, a significant shift from the more than 40 percentage point difference observed between second-generation immigrants and natives. Additionally, the probability of marrying a native increased by 50 percentage points from the second to the third generation. Notably, the magnitude of these generational differences remains largely unaffected by including

²Descriptive statistics confirm the intuition behind this outcome. There are large differences in hormonal contraceptive usage between native-Dutch and non-Western immigrant populations. By age 20, 85.7% of native-born individuals have used hormonal contraceptives at least once compared with only 34.4% of first-generation immigrants. There is no such difference in the usage of other drugs (anti-inflammatory, antihistamines, etc.). Survey data on attitudes towards sexuality also confirms that using hormonal contraceptives is a good proxy for adopting Western views on sexuality. See Achard (2022) for a lengthier discussion.

³The political systems in these two countries are different, but both recently held parliamentary elections. In France, elections are organized in two rounds, so only the first round can be compared with the Dutch system. In November 2023, the far-right, anti-immigrant Party for Freedom (PVV) came first in the Dutch general elections. Similarly, in June 2024, the far-right, anti-immigrant National Rally party led in the first round of the French legislative elections.

covariates meant to control for socioeconomic status, such as school fixed effects and parents' earnings. This suggests that cultural convergence occurs independently of the socioeconomic status changes in the families of second- and third-generation immigrants.

When examining detailed results by country of origin, different patterns emerge between origin countries that were already more similar to natives by the second generation (Indonesia and Surinam) and those that were still more distinct (Morocco and Turkey). The first group has fully caught up with natives by the third generation. In contrast, evidence of segmented integration appears among the second group. A significant share of this group has adopted native behaviors, substantially more than the second generation, but a relatively important proportion has not.

As expected, cultural convergence varies significantly by family composition. Conservative immigrants are less likely to marry outside their community, leading to slower assimilation when both parents have foreign backgrounds. However, the analysis shows that cultural convergence is still evident by the third generation, regardless of family composition. Adolescents with two second-generation immigrant parents are more likely to conform to native behavior than those with two first-generation parents, even though both groups have strong non-Western roots.

In terms of education, marked differences still exist between third-generation immigrants and the native population. For example, there is an 11 percentage point difference in the probability of studying in the vocational track of high school, with 56% of natives and 67% of third-generation immigrants following this path. Additionally, there is a 0.33 standard deviation difference in standardized math results of the Cito, a standardized test taken at the end of primary school.

While there is substantial improvement in language scores from the second to the third generation, other educational outcomes show little progress. These differences between generations are largely explained by changes in socio-economic status and are not robust to including such variables as controls. The same patterns are observed in France, highlighting striking similarities in the integration process between countries with different approaches to the question.

The paper then explores two mechanisms. The first one is negative bias on the part of teachers, and the second is peer effects. The former investigates whether teachers perceive third-generation immigrants differently from natives and second-generation immigrants (Lüdemann and Schwerdt, 2013; Carlana et al., 2022b; Tumen et al., 2023). To measure it, I use a variable representing the high school track advised by teachers to students before they take the Cito. I test whether, conditional on the actual test score, the advice given by teachers (*ex-ante*) differed for immigrant students compared to native students.

The second mechanism examines peer effects and whether they differ across genera-

tions. By using within school cross-cohort variation in grade composition (Hoxby, 2000; Black et al., 2013; Brenøe and Zölitz, 2020), I isolate a residual variation in exposure to native students during the final year of primary school (age 12). I argue that it is as good as random, and estimate its effects on the probability of using hormonal contraception at age 16. The test evaluates whether this variation has a larger effect on the third generation, which would suggest greater permeability to mainstream culture for that group.

The results suggest that teachers perceive third-generation immigrants very differently from natives. For a given score at the Cito, teachers are 2.61 percentage points less likely to recommend third-generation immigrant students for a higher academic track over a vocational one, compared to a mean outcome of 31%. This negative bias is slightly smaller than the 3.22 p.p. bias against second-generation immigrants. However, it is significantly larger for third-generation immigrants with backgrounds from Morocco or Turkey, at 6.13 percentage points.

Regarding the second mechanism, there is evidence that peer effects are more pronounced for the third generation. A ten percentage points increase in the share of native girls increases the probability of using hormonal contraception by 1.4 percentage points for third-generation immigrants (compared to a mean outcome of 44% among natives) but by less than 0.1 percentage points for second-generation immigrants.

This paper primarily contributes to the literature on the integration of third-generation immigrants in Europe. Recent and ongoing research has primarily focused on labor market outcomes (Zorlu and van Gent, 2024), education (Hunkler and Schotte, 2023; Pupaza et al., 2023; Drouhot et al., 2023), and friendship networks (Zhao and Drouhot, 2024). This body of work consistently finds evidence of enduring educational inequalities between natives and third-generation immigrants, particularly those from non-Western backgrounds, which aligns with the findings presented here.⁴

A distinctive aspect of this paper is its focus on immigrants with non-Western backgrounds. It is motivated by the observation that this population has not reached parity with natives even by the second generation (Bisin et al., 2008). Additionally, this study examines both educational and cultural integration and contrasts their results. Finally, it complements this literature by looking at underlying mechanisms, such as teacher bias - documented for incoming immigrants (Carlana et al., 2022b; Alesina et al., 2024) - and

⁴A similar body of literature in the U.S. has examined third-generation immigrants from the era of Mass Migration (Ward, 2020), revealing persistent inequalities, as well as the descendants of post-1965 immigration (Gans, 1992; Alba and Nee, 1997; Card, 2005; Jiménez et al., 2018).

differential peer effects.⁵

This research also contributes to the broader study of cultural integration dynamics. In the canonical framework proposed by Bisin and Verdier (2000, 2001); Bisin et al. (2004); Bisin and Tura (2019), cultural integration is understood to reach a steady-state characterized by a stable level of diversity, an intermediary situation between complete cultural homogeneity and total heterogeneity. While this paper does not assert that third-generation immigrants have reached such a steady-state, it does document which populations have fully converged with natives and which remain divergent by the third generation. This analysis echoes the concept of “segmented assimilation” in sociology (Portes and Zhou, 1993), which examines the varied outcomes of immigrant assimilation. Segmented assimilation contrasts with the traditional straight-line assimilation model, which suggested that immigrants and their descendants would gradually become more similar to the native population over time, both culturally and socioeconomically (Gordon and Gordon, 1964). Instead, segmented assimilation proposes that different immigrant groups experience distinct paths of assimilation.

Finally, this paper complements recent literature on the role of state policy in fostering cultural assimilation (Fouka, 2024, 2019, 2020). By comparing the situations of countries with different models of integration, it shows that long-term assimilation processes exhibit similar trends despite variations in policy approaches.

The rest of the paper is organized as follows: Section 2 presents the data, while Section 3 reports descriptive evidence on the integration of third-generation immigrants. Section 4 details how the descriptive evidence differs by origin countries and family composition. Section 5 discusses mechanisms and the last section concludes.

2 Data

2.1 Netherlands: Administrative registries

2.1.1 Dutch administrative registries

I combine multiple Dutch administrative registries collected and maintained by the Centraal Bureau voor de Statistiek (CBS). They cover the entire population of the Netherlands and are all linkable via a unique individual identifier. This linkage enables to put together

⁵While not focusing directly on the third generation, substantial literature has explored the long-term economic and cultural integration of immigrants in the United States from the era of Mass Migration (Abramitzky et al., 2021, 2020) and among second-generation immigrants in Europe (Perlmann and Waldinger, 1997; Algan et al., 2010).

a large set of information and to connect parents and children. This is particularly relevant to identify descendants of immigrants.

The key datasets include general demographic information such as immigration background, highest education attained, marriage and civil partnerships, information on births, earnings, school and health registries. The last two are used extensively, the former to observe grade composition and test scores. The latter, to use information on reimbursed drugs, particularly hormonal contraceptives. Data on drug usage and schools are available since 2006, data on earnings since 1999. Additional details can be found in the appendix, see Table A1.

2.1.2 Groups

This paper focuses on non-Western origins.⁶ First generation (1G) immigrants are those who migrated to the Netherlands. Since I focus on outcomes that can be observed during adolescence, 1G must have arrived during childhood. This population is sometimes referred to as the 1.5 generation because of its similarities to the second generation. The second generation (2G) consists of people who have at least one parent who is a first-generation immigrant. The third generation (3G) includes people with at least one grandparent who is a first-generation immigrant.

As time since migration grows, it is harder to characterize one's relation with migration. It is difficult to attribute an origin country and even to unambiguously tell what generation of immigrants an individual is. A child may have one first-generation immigrant parent and the other a second-generation, one of whom is of non-Western descent and the other is not. In this paper, the definitions give priority to the most recent migration, so the child of a 1G and a 2G is a 2G. To indicate a country of origin, I give priority to information on non-Western origin and from mothers when both parents are non-Western immigrants.⁷

2.1.3 Outcome variables

The outcome variables are divided into two categories: culture and education. It is important to keep in mind that different outcomes are measured at different ages. Therefore, the samples and their country composition change for each outcome. Generally speak-

⁶These are defined as North Africa, East Africa, South Africa, West Africa, South Asia, Southeast Asia, the Middle East and Central Asia, see table A2.

⁷Note that I compare individuals who are first, second or third generation immigrants at the same time - rather than comparing individuals directly with their parents or grandparents.

ing, since the population studied is young, examining outcomes at later ages reduces the sample size.

Cultural Outcomes Two key cultural outcomes are considered: marriage with a native and the use of hormonal contraception⁸. Marriage with a native is a common measure in the literature on cultural assimilation. Following (Achard, 2022), I argue that the use of hormonal contraception is a culturally charged consumption. I do it on two grounds, (i) the average usage rate is very different between non-Western immigrants and natives for this particular group of medicine and not others (see Table 1) and (ii) is a proxy for adopting Western views and attitudes about sexuality, which is typically a dimension in which natives and non-Western immigrants differ greatly. Merging administrative registries with a survey on sexual behavior, I provide supporting evidence in Table B1.

In addition, this measure has several desirable characteristics. Contraceptives are easily accessible - prescribed by general practitioners - and covered by health insurance until the age of 21. In addition, no parental consent is required after the age of 16.

Table 1: Raw differences

Age	Natives	1 st Gen	2 nd Gen
	Contraceptives (%)		
16	44.3	7.3	15
17	63.5	14.3	24.1
18	75.4	21.9	32
19	82.2	29.5	39
20	86.1	36.5	45.3
	Anti-inflammatory (%)		
20	44.2	44.5	46.2
	Any Drug (%)		
20	97.9	94.3	96.2

Notes: This table reports the percentage of young women who were living in the Netherlands between the ages of 16 to 20, who have used contraceptives, anti-inflammatory medicine, or any medication at least once by a certain age. Women are classified into three groups: natives, first-generation (Non-Western) immigrants, and second-generation (Non-Western) immigrants.

Education Outcomes The education system in the Netherlands is split into three tracks: an academic one (VWO), a technical one (HAVO), and a vocational one (MBO).

⁸I rely on information which uses the ATC4 classification. For contraceptives, the most disaggregated entry is the category G03A, “Hormonal contraceptives for systemic use”. It includes the pill, patches, injections, and implants.

The first one prepares for university, the second for professional colleges, and the third for vocational training and early entry in the labor market. The choice between vocational and non-vocational happens at the end of primary school (at the age of 12). Many students enter an undetermined (HAVO/VWO) track at the end of primary school for two years and then join technical or academic training. At the end of primary school, students take a standardized test whose results partially determine their track of study. There are several types of such tests and schools decide which their students will take. The most important one is the Cito.

In this paper, I use track choice for the entire population and for the subsample of students who use the Cito, their results at this test, in particular the z-scores of the math and language components, as well as the total score, which ranges from 500 to 550.

2.2 Survey data from France

2.2.1 TeO: Trajectoires et Origines

As a secondary source, this paper uses the "Trajectoires et Origines" (TeO2) survey, conducted by the National Institute for Demographic Studies (INED) and the National Statistical Institute (INSEE) in 2019. It is a cross-sectional survey based on representative samples of first and second generation immigrants and natives, with over 18,000 participants in total. Interviewees are asked questions about their situation and that of their children. Although TeO2 does not survey 3G, it is possible to obtain information on them through questions that are asked to 2G about their children.

2.2.2 Measures

Parents report the highest qualification their adult children (above 18) have obtained. From this information I create four outcomes: not dropping out, completing high school (any track), completing the academic track in high school and completing some college. The first three are computed for all adult children older than 20; the last one for children older than 23.

TeO2 also includes children's - adult and non-adult - first names. This information serves as a common measure of cultural identity and transmission (Fryer and Levitt, 2004; Abramitzky et al., 2020; Algan et al., 2022). In the French context, this is particularly relevant for immigrants from North Africa and the Middle East. Using the list from Laouénan and Rathelot (2022), I create a binary variable taking value 1 if a first name is

of Arab/Muslim origin.⁹

2.2.3 Groups

I use similar definitions of generations as for the Dutch case with some notable differences. As TeO only interviews one parent, I infer the origin of the other parent by using information about the current partner of the parent interviewed. I focus on the following countries and regions of origin: Morocco, Algeria, Tunisia, Turkey, Libya, Egypt and the Middle East. The sample restrictions are stricter than those applied to the Netherlands. It follows from the necessity to consider origin countries where the Arab/Muslim category for first names is relevant.

2.3 Descriptive statistics on 3rd generation immigrants

Table 2 presents key demographic information, including the family composition of all first, second and third generation immigrants residing in the Netherlands on 1 January 2021.

Three important points should be noted. First, the population of third-generation immigrants is very young, with an average age of 9. Second, this population consists mainly of people with backgrounds from Indonesia, Surinam, Morocco and Turkey. Given the lagging performance of the last two groups, the analysis will sometimes focus specifically on individuals from Morocco and Turkey, as in Hanemaaijer et al. (2023). Thirdly, there is variation in the number of grandparents with a foreign background: 37.4% have all grandparents as immigrants, 35.4% have only one immigrant grandparent, and 27.2% have more than one but not all as immigrants.¹⁰

3 Descriptive evidence on convergence

The purpose of this section is to provide descriptive evidence on the convergence - or absence of convergence - of third-generation immigrants. In particular, it pursues three objectives: first, to compare the second and third generations and study if the third generation is distinct from the second? The second objective is to compare the third generation with the natives and study whether the former have reached parity with the

⁹While first names are given to 3G, they are given by 2G. It could be seen as an outcome relevant for either group. To allow for comparability between France and the Netherlands, I consider it to be relevant for 3G.

¹⁰For France, see table E1 for succinct summary statistics.

Table 2: Descriptive Statistics - Differences between Generations

	1 st G	2 nd G	3 rd G			
	Age Distribution					
50 th Percentile	47.5	20.5	7.3			
Mean	46.4	21.5	9.0			
	Age at Arrival, $n = 324,672$ (34.9%)					
50 th Percentile	24.9					
Mean	24.9					
	Family Composition, Parents (% and Nb Obs)					
Both 1 st G		68.4				
Father 2 nd G		4.9				
Mother 2 nd G		9.4				
Father Native		6.8				
Mother Native		10.5				
	Family Composition, Grandparents (% and Nb Obs)					
All Grandparents			37.4			
One grandparent			35.4			
> 1 but not all			27.2			
	Country	Share	Country	Share	Country	Share
	Turkey	21.2	Morocco	28.6	Surinam	36.0
	Surinam	18.6	Turkey	26.4	Indonesia	21.4
	Morocco	18.5	Surinam	21.1	Turkey	19.8
	Syria	10.4	Indonesia	6.7	Morocco	17.8
	Iraq	4.9	Iraq	2.4	Egypt	0.9
N Obs	930,189		838,067		167,881	

Notes: This table reports descriptive statistics of the population of first, second and third generation immigrants with a non-Western background residing in the Netherlands on January 1 2021. For each generation it reports the mean and median age together with the five most important origin countries and their relative share within each generation (see lower panel). For the first generation, it reports the mean and median age at arrival - for a subsample for which this information is available. For the second and third generations, it reports the the share of different family compositions.

latter; and the third objective is to see whether the raw differences between generations are explained by covariates.

To answer all these questions, I estimate the following equation

$$y_i = \alpha + \sum_{j=1}^3 \theta_j \text{Gen}_j + X_i + \epsilon_i \quad (1)$$

where y_i is an outcome of interest, be it cultural or educational, θ_j refers to the generation of immigrants and X_i is a set of individual characteristics. I include in the sample all relevant first, second, and third-generation immigrants. To assess the first point, one can look at the difference between θ_3 and θ_2 . To assess the third point, one can look at how the theta coefficients vary with the inclusion of controls in equation 1. Finally, to assess the second point, one can compare the difference between mean outcomes of natives - measured on a random sample - and of different generations of immigrants.

The three points are assessed simultaneously in figures 1 and 2. They are made of two components, a top line and a series of dots with different shapes. The top line corresponds to the unconditional difference between first generation immigrants (base category in equation 1) and natives. The points correspond to the coefficients θ_2 - to the left - and θ_3 - to the right - with different sets of controls. Those include origin country fixed effects, fixed effects for primary school and cumulated parental earnings since 1999.¹¹ These controls are meant to capture different dimensions characterizing socioeconomic status.

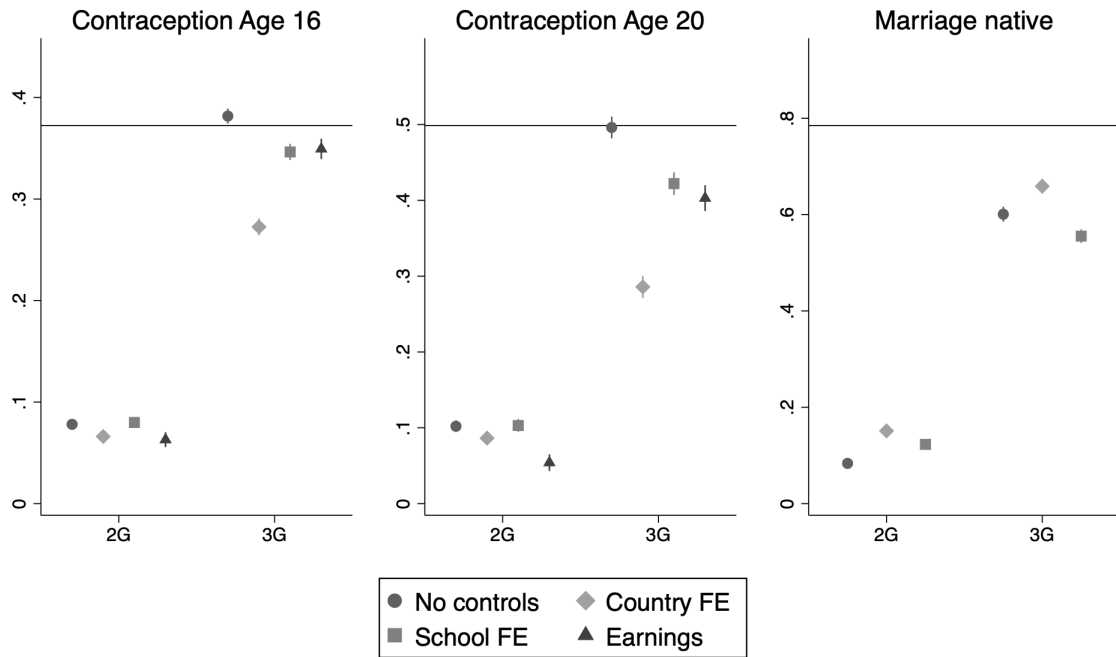
The figures should be read in the following way: if the points are close to the line, it means that immigrants are similar to natives. If the values on the left (corresponding to the second generation) differ from those on the right (corresponding to the third generation), it means that the two populations are different. If the dots with different shapes on the left or right are very different, it means that the difference between generations (and indirectly with natives) is sensitive to the inclusion of controls.

3.1 Cultural outcomes

Results are presented in Figure 1 for the outcomes having used hormonal contraception by age 16, age 20 and marrying a native. Three elements stand out. First, there is a significant difference between the second and third generations, as the θ_3 coefficients are

¹¹The cumulative earnings (since 1999) of each parent enter separately. To account for differences in parents' age, I also include dummies for mothers' and fathers' birth years. Results using high school fixed effects are similar to those with primary school fixed effects.

Figure 1: Convergence - Cultural outcomes



Notes: This figure presents estimates of the equation 1. The dependent variables are having used hormonal contraception at least once by the age of 16 - subfigure on the left - having used hormonal contraception at least once by the age of 20 - subfigure in the middle - and having married a native - subfigure on the right. Each subfigure reports θ_2 and θ_3 coefficients using different sets of controls. The round dots correspond to models without controls, the losange dots to models with origin countries fixed effects, the squared dots to models which include primary school fixed effects and the triangle dots to models with parents' cumulated earnings since 1999 and parents' birth year fixed effects (entering separately for each parent). The baseline category comprises first-generation immigrants. The solid lines represent the unconditional mean among natives (calculated on a random sample of natives of relevant ages). Descriptive statistics about the samples are provided in Tables C1 and . The numerical data can be found in Tables C3, C4, and C5.

much larger than the θ_2 coefficients. Second, the third generation is very similar to natives, with estimated coefficients closely aligning with the solid line. Third, these patterns remain robust to including powerful socioeconomic controls. Coefficients are somewhat lower when controlling for origin country fixed effects but they remain substantially large. They are even less affected by the inclusion of school fixed effects or family’s earnings.¹²

3.2 Educational outcomes

Figure 2 summarizes evidence on educational outcomes and presents a contrasting picture to the findings of Figure 1. Specifically, neither the second nor third generation has achieved parity with natives, as their coefficients remain far from the upper line. For instance, the unconditional probability to enter the academic or professional track is 33.7% for 3G when it is 29% for 2G and 44% for natives. Similarly, the average Cito z-score in maths is -0.27 for 3G, -0.26 for 2G, and +0.06 for natives. Any improvement between the unconditional mean of the third generation and that of the second is highly sensitive to the inclusion of controls. Nearly all of these differences are accounted for by controls, especially the inclusion of primary school fixed effects and parents’ cumulated earnings.

When examining different educational outcomes, there is a slight improvement in total scores and a more substantial improvement in language, but no improvement - or even a decrease - in other outcomes.¹³

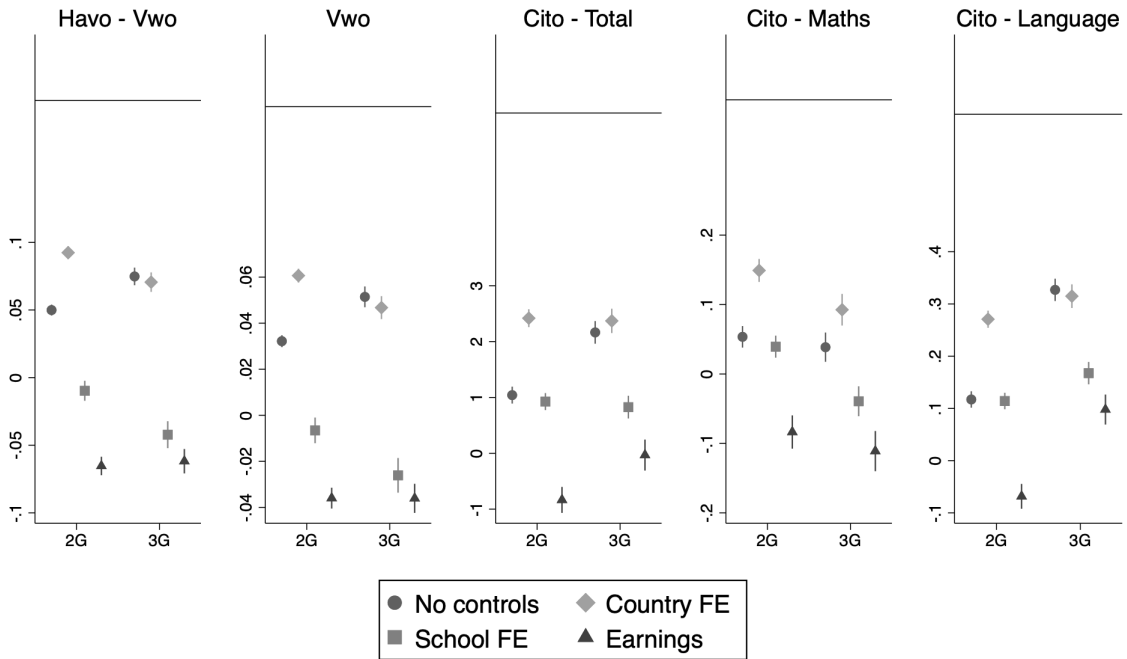
3.3 Corroborating evidence from France

Using French survey data, I examine similar descriptive evidence on two series of outcomes: education (see Figure 3, following the same layout as Figures 1 and 2) and culture (see Table 3). In Table 3, I regress the dummy variable indicating whether an individual has an Arab/Muslim name on generational status. The baseline category for comparison is first-generation immigrants. The controls include age, gender, country of origin, parents’ year of birth, and parents’ education (interacted with their gender). The last two controls account for compositional effects and the influence of parents’ socioeconomic status.

¹²Descriptive statistics about the sample used for the outcome “Contraception Age 16” are provided in Table C1. The numerical data depicted in Figure 1 can be found in Tables C3, C4, and C5. For the outcome “marriage with a native,” it is important to note that the sample size for the third generation (3G) is relatively small compared to other outcomes and consists almost entirely of individuals with a background in Surinam, as shown in Table C2.

¹³Descriptive statistics about the sample are provided in Table D1. The numerical data presented in Figure 2 can be found in Tables D2, D3, D5, D4, and D6.

Figure 2: Convergence - Educational Outcomes



Notes: This figure presents estimates of the equation 1. The dependent variables are studying in the professional or academic track on high school - “Havo - Vwo” - studying in the academic track on high school - “Vwo” - Cito total score - “Cito - Total” - and Cito z-score in maths and language - “Cito - Maths” and “Cito - Language”. Each subfigure reports θ_2 and θ_3 coefficients using different sets of controls. The round dots correspond to models without controls, the losange dots to models with origin countries fixed effects, the squared dots to models which include primary school fixed effects and the triangle dots to models with parents’ cumulated earnings since 1999 and parents’ birth year fixed effects (entering separately for each parent). The baseline category comprises first-generation immigrants. The solid lines represent the unconditional mean among natives (calculated on a random sample of natives of relevant ages). Descriptive statistics about the sample are provided in Table D1. The numerical data presented can be found in Tables D2, D3, D5, D4, and D6.

Similar patterns to those identified in the Netherlands emerge in France. There is a pronounced difference between the second and third generations on cultural outcomes, and they are not explained by control variables. The third generation has a significantly lower probability of having an Arab/Muslim name compared to the first generation (31 to 38 percentage points less, given an unconditional mean probability of 52%) and also a significantly lower probability than the second generation (23 to 27 percentage points less).¹⁴

Table 3: Convergence - Cultural Outcome - TeO2

Having an Arab/Muslim first-name				
2 nd Generation	-0.09** (0.039)	-0.09** (0.039)	-0.11*** (0.038)	-0.08** (0.038)
3 rd Generation	-0.32*** (0.040)	-0.32*** (0.040)	-0.38*** (0.039)	-0.31*** (0.040)
Gender and Age	✓	✓	✓	✓
Origin FE		✓		
Parent's age			✓	
Parents' education				✓
N	10594	10594	10594	10466
r2	0.06	0.06	0.09	0.07
Mean	0.52	0.52	0.52	0.52

Notes: Table reports coefficients from equation 1. The outcome variable is a dummy taking value one if someone has an Arab/Muslim first name. The first column correspond to models without controls (besides gender and age), the second includes origin countries fixed effects, the third parents' age (interacted with their gender) and the fourth parents' education (interacted with their gender). The baseline category comprises first-generation immigrants. The descriptive statistics for this sample are presented in table E1.

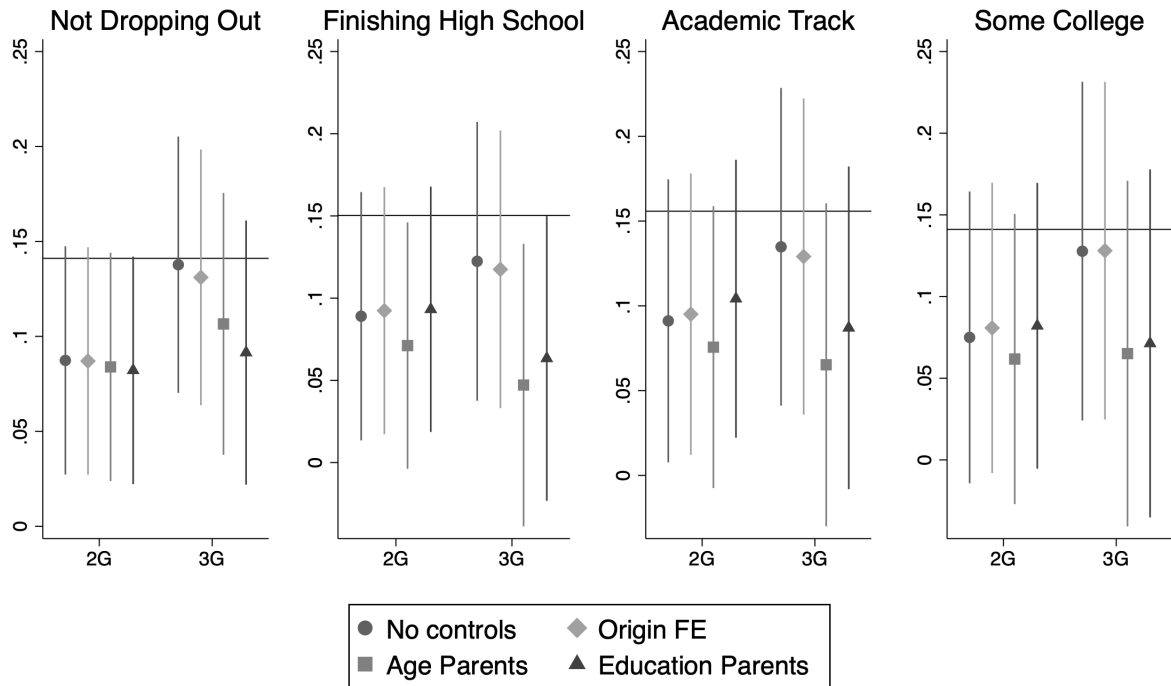
Similar to the situation in the Netherlands, immigrants have not reached parity with natives in their educational success and most of the apparent improvement is explained by covariates.¹⁵¹⁶

¹⁴Descriptive statistics for this sample are provided in Table E1. Additional evidence, broken down by family composition, can be found in Table E3. As noted in the data description, the definition of the third generation excludes individuals born to a first-generation and second-generation couple. In Table E2, I reproduce the analysis including these groups as third generation. The results are lower but still substantial in magnitude and highly significant.

¹⁵The descriptive statistics for this sample are presented in table E4 and the detailed regression coefficients can be found in table E5.

¹⁶The purpose of this paper is not to compare the educational attainment of immigrants (relative to natives) between France and The Netherlands. This would be challenging since the data sources used in this paper are different between the two countries. To do so, one can refer to PISA comparisons, which assess the overall differences between natives and immigrants (and their descendants) across OECD countries (see OCDE (2023) chapter 7).

Figure 3: Convergence - Educational Outcomes - TeO2



Notes: This figure presents estimates of the equation 1. The dependent variables are dummies corresponding to level of achieved education - “Not dropping out”, “Finishing High School”, pursuing academic track in high school “Academic track” and “Some College”. Each subfigure reports θ_2 and θ_3 coefficients using different sets of controls. The round dots correspond to models without controls, the losange dots to models with origin countries fixed effects, the squared dots to models which include parents’ age and the triangle dots to models with parents’ education. The baseline category comprises first-generation immigrants. The solid lines represent the unconditional mean among natives. The descriptive statistics for this sample are presented in table E4 and the detailed regression coefficients can be found in table E5.

4 Heterogeneity analysis

In this section, I examine heterogeneity along two dimensions: family composition and country of origin. For family composition, I analyse whether outcomes vary according to the number of immigrant parents an individual has. For origin country, I report descriptive evidence for the four main countries of origin separately.

4.1 By family type

Family composition directly influences the environment in which one grows up and is particularly important for cultural outcomes. Conservative immigrants are less likely to marry outside their community, generating a negative correlation between the number of immigrant grandparents and the probability to converge with natives' cultural mainstream. This aspect is also important because the definition of the third generation is somewhat arbitrary. Individuals with one parent who is a first-generation immigrant and the other a second-generation immigrant are classified as the second generation, but could legitimately be classified as third generation. This choice of definition could lead to compositional changes and affect the results.

In table 4, I report conditional contraceptive use at age 20 among the first, second and third generations, depending on the migration status of their parents (native, first or second generation). As expected, family composition has a substantial effect. Use is very low among adolescents with two first-generation migrant parents (about 35%, compared to 86.1% for natives) and much higher when one parent is a native and the other a second-generation immigrants, around 88% - so even higher than natives. There are various intermediate situations, with an average use of 75% when both parents are second-generation immigrants or when one parent is a native and the other is a first-generation immigrant. When one parent is 1G and the other 2G - the case mentioned above - use is around 57%. While this number is lower than the average natives' use, it is still much higher than when both parents are first-generation immigrants. This shows that the pattern of convergence with natives holds - although it is slower - when using a different definition of the third generation.

This also shows a more fundamental point about the third generation. Both teenagers with two 2G parents and those with one 1G parent and the other 2G have strong non-Western roots. Yet the former group is on average much closer to natives. This is indicative that beyond family composition, some level of cultural convergence is at play

with the third generation.¹⁷

Table 4: Differences Between Generations - Contraception - Age 20

Father			Mother			Mean	SE	N Obs
Native	1 st G	2 nd G	Native	1 st G	2 nd G			
			First Generation					
	✓			✓		35.42	0.36	17,409
			Second Generation					
	✓			✓		34.95	0.16	89,461
	✓		✓			82.03	0.32	14,407
✓				✓		79.67	0.39	10,398
	✓				✓	56.58	0.64	5,924
		✓		✓		56.90	0.87	3,267
			Third Generation					
		✓			✓	75.35	1.17	1,367
		✓	✓			87.30	0.71	2,228
✓					✓	88.96	0.63	2,437
			Average native			86.1		

Notes: This table reports the mean usage rate of hormonal contraception by age 20 among first, second, and third-generation immigrants. The results are further categorized by each parent's migration status, specifying whether the parent is a first or second-generation immigrant of non-Western origin or a native.

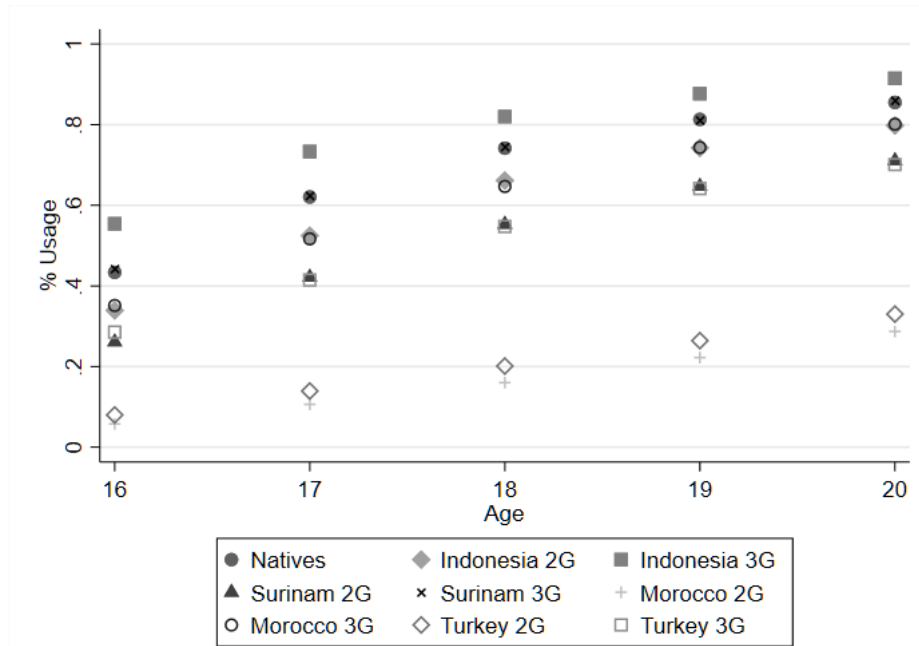
4.2 By origin country

For contraceptive use, the results by origin country are shown in Figure 4. It plots the average use by age for natives and first, second and third generation immigrants from Surinam, Indonesia, Turkey and Morocco. The data show different starting points for different countries of origin, with particularly low usage among first and second generation immigrants from Turkey and Morocco. In all countries of origin, the third generation has significantly approached the level of use of the native population. For Surinam and Indonesia, the third generation has reached parity with the natives, while the second generation had lower usage. For Morocco and Turkey, third-generation use is still lower than that of the natives, but much higher than that of the second generation from their respective countries.¹⁸ By the third generation total convergence is only not achieved -

¹⁷Table F1 provides the same statistics for use at age 16, and table F2 for the outcome of marrying a native. Similar evidence can be seen for France in tables E2 and E3. In both cases there is a strong convergence regardless of the family structure.

¹⁸Detailed figures can be found in table F3

Figure 4: Cultural outcome - By origin countries



Notes: This figure reports the mean usage rate of hormonal contraception by ages 16 to 20 among first, second, and third-generation immigrants from Indonesia, Surinam, Morocco and Turkey together with the same averages calculated for native women.

although partial convergence is - for origins that were the furthest from the mainstream.

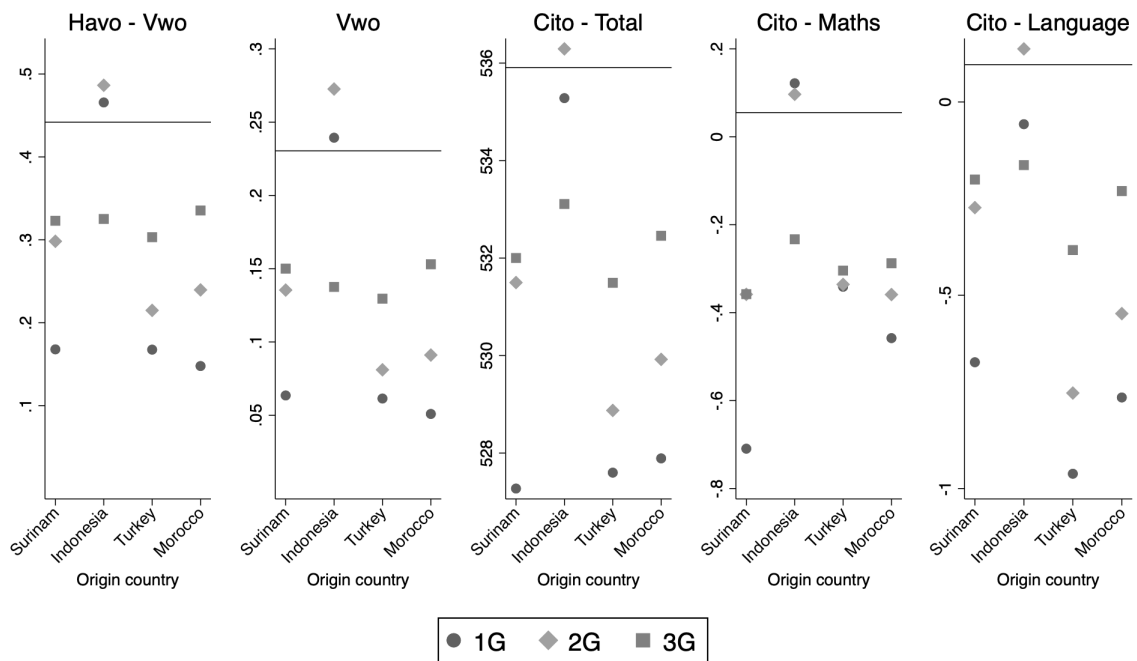
For education, Figure 5 mirrors the layout of figures 1 and 2, showing the average educational attainment of first, second and third generation immigrants from different countries of origin (dots of different shapes) and natives (solid line). The educational attainment of the third generation is relatively consistent across all countries of origin, with the squared dots indicating similar outcomes in each sub-figure. There is a decline in performance from the second to the third generation for Indonesia, a moderate increase for Morocco and Turkey and almost no change for Surinam.¹⁹

5 Mechanism

Establishing mechanisms and causality is challenging because being a third-generation immigrant, as opposed to a second-generation immigrant, is a characteristic and not a variable that can be randomised (Holland, 1986). In this section, I explore two mechanisms that have been highlighted in the literature and that can be investigated with the available

¹⁹Detailed figures can be found in table F4.

Figure 5: Convergence - Educational outcomes - By origin countries



Notes: This figure reports the mean educational outcomes among first, second, and third-generation immigrants from Indonesia, Surinam, Morocco and Turkey. The dependent variables are studying in the professional or academic track on high school - “Havo - Vwo” - studying in the academic track on high school - “Vwo” - Cito total score - “Cito - Total” - and Cito z-score in maths and language - “Cito - Maths” and “Cito - Language”. The solid lines represent the unconditional mean among natives. The numerical data presented can be found in Tables F4.

data: negative bias by teachers (Carlana et al., 2022a,b; Tumen et al., 2023) and peer effects.

The first mechanism examines whether teachers perceive third-generation immigrants differently from natives. Such perceptions could partly explain why educational outcomes do not improve significantly across generations. Teachers who are negatively biased towards immigrants may dedicate less time to their needs. Do the negative bias that exist towards recently arrived immigrants extends towards those from the third generation?

The second mechanism is peer effects. Besides being a usual suspect when studying teenagers' behaviors, it is interesting to investigate whether peer effects operate similarly for each generation of immigrants. Do third-generation immigrants respond differently from second-generation immigrants when exposed to the same peers? Third-generation immigrants have a looser connection to the origin country. A higher responsiveness to peer effects from their part would indicate that they are more permeable to mainstream culture.

It is important to recognise that these mechanisms are just a few among many potential factors. They do, however, provide indicative evidence of the channels at play behind the descriptive evidence shown in the previous sections. In the analysis that follows, I group first and second generation immigrants together to make the comparison with the third generation clearer.

5.1 Negative Bias

To assess negative bias, I use a variable representing the advice given by teachers to students before they take the Cito exam. I test whether, conditional on the actual score obtained, the advice given by teachers differed for immigrant students compared to native students, and whether this differs by generation of immigrants. The idea is that the Cito exam provides a more impartial assessment of a student's ability than a teacher's subjective opinion. This negative bias does not imply differential treatment, nor does it prevent students from doing better than what their teachers expect. It does however mean that immigrants are seen less favourably than natives by their teachers. To investigate this mechanism, I estimate the following equation .

$$y_i = \alpha + \sum_{j \in \{2,3\}} \theta_j \text{Gen}_j + X_i + \epsilon_i \quad (2)$$

The outcome variable is binary and indicates whether a student received advice for one of the two highest tracks. The regressions include year fixed effects together with individual controls such as gender and total Cito score in all specifications. The coefficients θ_j represent the probability of receiving a positive recommendation compared to

Table 5: Negative Bias- Teacher Advice

	Recommendation for Professional or Academic track					
1 st /2 nd Generation	-0.0292*** (0.0038)	-0.0322*** (0.0038)	-0.0807*** (0.0049)	-0.0120*** (0.0039)	-0.0362*** (0.0055)	-0.0317*** (0.0054)
3 rd Generation	-0.0090** (0.0044)	-0.0261*** (0.0045)	-0.0613*** (0.0075)	-0.0160*** (0.0048)	-0.0271*** (0.0065)	-0.0301*** (0.0064)
Cito Score	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
School FE		✓	✓	✓	✓	✓
Morocco/Turkey			✓	✗		
Boys	✓	✓	✓	✓	✓	
Girls	✓	✓	✓	✓		✓
N Obs	227231	226730	120978	118755	111618	114063
R squared	0.44	0.47	0.45	0.52	0.48	0.49
Mean	0.32	0.31	0.26	0.38	0.32	0.31
N Schools	6383	5882	5001	5740	5145	5179
F-test	39.96	4.32	9.21	1.30	4.30	0.15
P-value	0.00	0.04	0.00	0.25	0.04	0.70

Notes: This table presents coefficients from a regression where the dependent variable is a binary outcome taking value one if primary school teacher recommended that a child studies in the professional or academic (as opposed to vocational) track. This outcome was recorded before primary school children took the Cito exam. All columns control for the total Cito score and year fixed effects. The second column adds school fixed effects, the third only focuses on students with a Moroccan or Turkish background while the fourth one excludes them. The fifth column only looks at boys and the six only at girls. The baseline category is composed of native children. Standard errors, clustered at the school level, are reported in parentheses.

the baseline group (natives), distinguishing between first/second and third generation immigrants. A negative coefficient indicates that an immigrant is less likely to receive a positive recommendation than a native with the same Cito total score. If θ_2 and θ_3 are similar, it suggests that teachers view immigrants similarly, regardless of generation.

The results are presented in Table 5, with each column representing a different subsample and set of controls. The first column examines the full sample without primary school fixed effects. From the second column, primary school fixed effects are included. The third column includes only Moroccan/Turkish immigrants, while the fourth excludes them. The fifth and sixth columns analyze boys and girls separately.

I report θ_2 and θ_3 , along with the F-test for the statistical significance of the difference between the two. All coefficients are negative, statistically significant and substantial in magnitude. Although the differences between θ_2 and θ_3 are statistically significant, they are small in magnitude in particular when focusing on immigrants from Morocco and Turkey, -6.1 p.p. for 3G and -8.1 p.p. for 1G/2G compared to natives.²⁰

5.2 Peer effects

Since the third generation is more distant from the cultural norms of the origin country, it may be more permeable to native influence. To test this channel, I isolate an exogenous variation in peer characteristics and assess whether peer effects are stronger for 3rd generation immigrants compared to 1st and 2nd generations. Specifically, I use an exogenous variation in the composition of primary school (at age 12) and estimate its effect on the use of hormonal contraception at age 16. I focus on variation in the proportion of native girls in the grade.

The estimation follows a common specification used to study peer effects in schools (Hoxby, 2000; Black et al., 2013; Brenøe and Zölitz, 2020). The model is formulated as follows:

$$y_i = \alpha + \sum_{j=2}^3 \theta_j \text{Gen}_j + \sum_{j=2}^3 \beta_j \text{Gen}_j \times \text{Share Natives}_{s,t} + \lambda_s + \psi_t + \sum_{s=1}^S t_s + X_i + \epsilon_{i,s} \quad (3)$$

where Gen_j is a dummy variable for the individual's generation, taking the value 1 for the generation j^{th} (1st/2nd and 3rd). I focus on same-sex influence, girls influencing girls. $\text{Share Natives}_{s,t}$ is the share of native girl students in the grade in year t . This variable

²⁰Table G1 shows similar patterns and conclusions for the outcome of being advised for the highest track.

measures exposure to native peers.²¹ Natives are defined as neither 1G, 2G nor 3G with a non-Western background. λ_s denotes school fixed effects, ψ_t denotes year fixed effects, and t_s captures school-specific time trends.²² X_i includes individual characteristics, number of siblings, parents' age, parents' education level - dummy variables for college and below college - and (ln) family earnings, which is the combined log of father's and mother labor earnings in year t . The variables of interest, β_2 and β_3 , capture how different generations respond to an increase in the presence of natives. The primary objective is to test whether $\beta_j = 0$ and $\beta_2 = \beta_3$.

The descriptive characteristics of the sample are presented in Table 6, broken down by immigrant generation. The table includes key demographic information, school tracks, educational outcomes, and details of class composition. Parents of third generation immigrants differ significantly from those of the first and second generations. They tend to be more educated and have higher wages. In addition, their children attend schools with a higher proportion of native pupils, peers who have higher wages and, live in neighborhoods with a larger share of natives.

The intuition behind this specification is that by controlling for ψ_t , λ_s , and t_s , the residual variation in $\text{Share Natives}_{s,t}$ can be considered as good as random. To support this assumption, I conduct balancing tests by regressing class level characteristics such as $\text{Share Natives}_{s,t}$ on individual characteristics X_i . If the identifying assumption is correct, controlling for ψ_t , λ_s , and t_s , there should be no correlation between X_i and y_i . The results are presented in Table 7. The first column does not include year or school fixed effects, corresponding to a naive comparison. The second column adds school and year fixed effects, and the third column includes school-specific time trends. The third column shows no systematic correlation between individual characteristics and the main covariate, with only one statistically significant difference whose associated coefficient is very small (coefficient of +0.11 for a mean score of 21.45). The F-test of the joint significance of all individual characteristics has a associated p-value of 0.36.²³

The results of the estimation of equation 3 are presented in Table 8. The first column does not include year or school fixed effects, corresponding to a naive comparison. The second column adds school and year fixed effects and the third column includes school-specific time trends. The results indicate a peer effect only in the third generation, not

²¹It is not straightforward to define what peer group to look at because it is not clear ex-ante how young immigrants define the frontier between in- and out-group. Since natives always correspond to an out-group, they are a more neutral choice.

²²Definitions are detailed in Table A1.

²³Tables H1, H3 and H2 show additional balancing tests of peer characteristics on individual covariates.

Table 6: Descriptive Statistics - Differences between Generations

Generations	First and Second	Third
Age	12.12	11.96
Share in Havo/Vwo	0.34	0.39
City - Zscore - Maths	-0.44	-0.38
City - Zscore - Language	-0.35	-0.04
Cito - Score	530.53	532.76
Nb of siblings	1.92	1.64
(Ln) family earnings	7.41	9.37
Age Mother	41.24	39.41
Age Father	46.01	41.61
Mother College	0.37	0.64
Father College	0.37	0.57
Mother Below College	0.37	0.11
Father Below College	0.27	0.10
Share with Turkish/Moroccan background	0.57	0.22
Share of native girls in grade	20.89	31.36
Peers - Average wage fathers	10.58	10.82
Peers - Share of natives in neighborhood	57.62	65.33
Nb of children in grade (Mean)	31.38	34.59
Nb of children in grade (75 pct)	41	45
Nb of children in grade (25 pct)	21	24
Number of Obs	93086	6688

Notes: This table reports summary statistics of first, second and third generation students in Dutch primary schools taking the Cito exam. It reports individual characteristics (see row “Age” to row “Father School”) and characteristics observed at the grade level (see remaining rows).

Table 7: Balancing Table

	Share of native girls in the grade		
Number of siblings	-1.0144*** (0.1014)	0.0135 (0.0284)	0.0069 (0.0256)
Wage Parents	0.2637*** (0.0157)	0.0036 (0.0054)	0.0020 (0.0050)
Age Mother	1.8428*** (0.1301)	0.1330** (0.0552)	0.0683 (0.0528)
Age Father	0.1570** (0.0728)	0.0452 (0.0301)	0.0191 (0.0279)
Age Mother Sq	-0.0195*** (0.0015)	-0.0014** (0.0006)	-0.0007 (0.0006)
Age Father Sq	-0.0023*** (0.0007)	-0.0005 (0.0003)	-0.0002 (0.0003)
Mother College	0.9301*** (0.1743)	-0.0131 (0.0641)	-0.0341 (0.0603)
Father College	1.5634*** (0.1527)	0.1470** (0.0585)	0.1125** (0.0548)
Mother Below College	-2.7839*** (0.1828)	-0.1984*** (0.0656)	-0.0772 (0.0618)
Father Below College	-1.3861*** (0.1726)	0.1102* (0.0621)	0.0768 (0.0576)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend			✓
N Obs	99749	99048	99048
R squared	0.16	0.83	0.87
Mean	21.59	21.45	21.45
F-test	136.27	3.81	1.10
p-value	0.00	0.00	0.36

Notes: This table presents coefficients from a regression where the dependent variable is the percentage of girls whose parents are neither first nor second-generation immigrants. This share is calculated among children in the final grade of primary school. The first column includes origin country and year fixed effects. The second column adds school fixed effects, and the third incorporates a school-specific time trend. Independent variables include the number of siblings, parents' wages during the last year of primary school, parents' age and age squared, and dummy variables for parents' education (college or high school) with missing values as the baseline category. F-test for the joint significance of all individual characteristics and their associated p-values are shown in the last two rows. Standard errors, clustered at the school level, are reported in parentheses.

in the second suggesting that the former is more permeable to peer influence, potentially explaining why cultural convergence is stronger for this group.²⁴

Additional results focusing on immigrants from Morocco and Turkey show much larger effects for the third generation of these origin groups (see table H4), suggesting that permeability is particularly strong for groups further from the native mainstream. This pattern is also observed when looking at contraceptive use at age 20 (see tables H5 and H6).

Table 8: Peer effects - Baseline regressions

Contraceptive usage at age 16			
$1^{st}/2^{nd}G$	0.0020*** (0.0001)	0.0002 (0.0002)	0.0001 (0.0002)
$3^{rd}G$	0.0029*** (0.0004)	0.0011** (0.0005)	0.0014*** (0.0005)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend		✓	✓
Individual Controls			✓
N Obs	99774	99073	99048
R squared	0.12	0.25	0.25
Mean	0.15	0.15	0.15
F Test	3.93	4.31	7.42
P Value	0.05	0.04	0.01
N clusters	5431	4730	4730

Notes: This table presents estimates of the equation 3. The dependent variable is a binary indicator for having used contraceptives at least once by the age of 16. All models include controls for country of origin and year fixed effects, with additional controls added incrementally. The second column introduces school fixed effects and school-specific time trends. The third adds individual characteristics. These characteristics include child's age, parents' age, parents' education level, number of siblings, and (log) of father's earnings in the last year of primary school. The native share is defined as the percentage of girls in the last year of primary school whose parents are neither first nor second generation immigrants. Coefficients reported are the interaction terms between immigrant generation and native share. Standard errors are clustered at school level.

5.2.1 Additional results

Alternative identification School registry includes information on grade composition at the end of primary school and in the first year of secondary school (for students entering

²⁴This result on 1G/2G is similar to the peer effects on contraceptive use estimated in Achard (2022) on first generation asylum seekers.

Havo - Vwo). There is no inherent reason to prefer one set of information over the other. Therefore, I repeat the previous analysis using the same identification strategy for grade composition at the beginning of secondary school. The balancing tests for this population are reported in Table H7, and for the sub-sample of immigrants with a Moroccan or Turkish background in Table H8. They do not show large and systematic correlations between individual characteristics and class composition.

Tables H9 and H10, which replicate Tables 8 and H4, show the same pattern: the effect is much larger for third generation immigrants - as compared to the second generation, especially those with a Moroccan or Turkish background.

Results on Educational Outcomes I replicate the analysis for educational outcomes, examining the effect of grade composition at the end of primary school on the probability of studying in one of the two highest tracks in secondary school. The results are presented in tables H11 and H12 (for students with a Moroccan or Turkish background). These results do not indicate differential peer effects between generations.

6 Conclusion

Using Dutch administrative records, this paper examines third-generation immigrants in the Netherlands and analyzes convergence in cultural and educational outcomes, clearly distinguishing between these two dimensions.

Descriptive analysis shows that third-generation immigrants are much closer to natives in cultural terms. There is a significant, non-linear shift from the second to the third generation. These changes cannot be fully explained by country of origin or family background. However, unlike cultural outcomes, educational progress among third-generation immigrants is less evident.

These results are confirmed when using French survey data. When looking into mechanisms, I find evidence that third-generation immigrants are more influenced by native peers and are more responsive to their social environment. I also show that they likely suffer from the same negative bias as previous generations of immigrants.

There are three main takeaways from this paper which are interesting to the general discussion on the integration of the descendants of immigrants. First, the process for cultural and educational integration are not fully correlated. While the latter seems to have stalled between the second and third generations, the former is still very much at play during this time. Second, while many third generation immigrants have converged with natives' mainstream, a significant proportion has not. Third, while the third generation appears more permeable to natives' influence, they still suffer from negative bias in the

host society.

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Online Appendix

A More on data and sample definition

Table A1: Definition of the main variables

Dataset	Original data - CBS Variable	Use
HOOGGSTEOPLTAB	oplnivsoi2016agg4hgmetnirwo	Highest education achieved
GBAADRESOBJECTBUS		Place of living
MEDICIJNTAB	ATC4	entry G03A for contraception
	ATC4	entry M01A for anti-inflammatory
GBAPERSOONTAB	gbageneratie	Generation of immigrants
	gbaherkomstgroepering	Origin country
KINDOUDERTAB		parents-child linkage
GBAVERBINTENISPARTNERBUS		marriages and civil partnerships
POLISBUS/SPOLISBUS	(s)lnlbph	Fiscal wage
BAANSOMMENTAB	fiscloon	Fiscal wage
CITOTAB		
	citobrin_crypt	Primary school FE
	CitoStandaardScore	Cito score Total
	Citoadviesleerkrach	Advice teacher
	citozscoretaal	Cito z-score reading
	citozscorerekenenwiskunde	Cito z-score mathzematics
ONDERWIJSDEELNEMERSTAB		
	typeonderwijs==10 (VO)	to be in the sample for section 5
	voleerjaar==1	to be in the sample for section 5
	BRIN_crypt vobrinvest oplnr	Secondary school FE and grade cohort
OPLEIDINGSNRREF	onderwijssoortvo	To code in HAVO.VWO and VWO

Table A2: Grouping countries into regions

Region	Countries
North Africa	Algeria Egypt Libya Morocco Sudan Tunisia
East Africa	Burundi Comoros Djibouti Eritrea Ethiopia Kenya Madagascar Malawi Mozambique Rwanda Seychelles Somalia Uganda Tanzania Zambia Zimbabwe
Central Africa	Angola Cameroon Central African Republic Chad D.R. Congo Zaire Equatorial Guinea Gabon
South Africa	Botswana Namibia South-Africa
West Africa	Benin Burkina Faso Cape Verde Ivory Cost Gambia Ghana Guinea Guinea-Bissau Liberia Mali Mauritania Niger Nigeria Senegal Sierra Leone Togo
Latin America	Antigua Barbuda Argentina Bolivia Brazil Chili Colombia Cuba Dominican Republic Ecuador El Salvador Guatemala Guyana Haiti Honduras Jamaica Mexico Nicaragua Panama Peru Surinam Trinidad Tobago Uruguay Venezuela USA Canada
North America	
Central Asia	Kazakhstan Kyrgyzstan Turkmenistan Tajikistan Uzbekistan
East Asia	China Korea South-Korea North-Korea Japan Mongolia Taiwan
South-East Asia	Cambodia Indonesia Laos Malaysia Myanmar Philippines Singapore Thailand Vietnam
South Asia	Afghanistan Bangladesh Bhutan India Iran Nepal Pakis Sri Lanka Tibet
Middle East	Armenia Azerbaijan Bahrain Cyprus Georgia Iraq Israel Jordan Kuwait Lebanon Oman Qatar Saudi Arabia Palestine Syria Turkey United Arab Emirates Yemen
Eastern Europe	Belarus Bulgaria Czech Republic Hungary Poland Moldavia Romania Russian Federation Slovakia Ukraine
Northern Europe	Estonia Latvia Lithuania Great-Britain
Southern Europe	Albania Bosnia Herzegovina Croatia Greece Italy Montenegro Portugal Slovenia Spain Yugoslavia Kosovo Macedonia
Western Europe	Austria Belgium France Germany Netherlands Switzerland
Oceania	Australia Samoa

Note : This list corresponds to the sub-continental grouping used by UN Stats, see online

B More results on hormonal contraception as a culture outcome

Table B1: Differences between taking/not taking hormonal contraceptives for immigrants

	Before Marriage	Homosexuality	Female Sexuality	Knowledge Index	Had Sex
Contraceptive	0.30*** (0.037)	0.11*** (0.032)	0.20*** (0.039)	0.96*** (0.164)	0.45*** (0.037)
Mean Outcome	0.32	0.17	0.34	6.37	0.48
No. of Obs	546	546	546	546	546
R-Squared	0.14	0.03	0.09	0.09	0.33

Notes: This table reports the results from several linear regressions where the outcomes are measures of attitudes and (reported) behavior regarding sexuality. Explanatory variables are age fixed effects and a dummy for whether or not a woman has used the contraception outcome between the ages of 16 to 20. The sample is made of first- and second-generation (Non-Western) immigrants who answered the survey “Sex under the age of 25”. Outcome variables include a dummy for having positive views on sexual intercourse before marriage, on two men kissing in the street, and on women having several sexual partners. It also includes a knowledge index ranging from 0 to 8 and a dummy for having had sex.

C More results on cultural convergence

Table C1: Descriptive Statistics Differences between Generations - Contraception Age 16

Generation	Natives	First	Second	Third
Family Wage	9.20	3.45	7.08	9.06
Age Mother	43.17	40.14	41.16	39.49
Age Father	45.56	46.00	45.73	41.68
Mother College	0.47	0.22	0.36	0.63
Father College	0.45	0.24	0.35	0.56
Mother Below College	0.08	0.43	0.36	0.11
Father Below College	0.06	0.35	0.26	0.10
Iran		0.04	0.01	0.01
Iraq		0.12	0.02	
Afghanistan		0.13	0.01	
Syria		0.17	0.01	
Turkey		0.09	0.28	0.13
Morocco		0.09	0.29	0.08
Surinam		0.05	0.18	0.44
Indonesia		0.01	0.05	0.26
Mean outcome	0.43	0.06	0.14	0.44
Nb of Observations	15737	26191	172633	12183

Notes: This table reports descriptive statistics of the population of natives, first, second and third generation immigrants with a non-Western background followed in Figure 1 - subfigure “Contraception Age 16”. It reports family characteristics, family (cumulated) labor earnings since 1999, parents’ age and education together with the composition by origin country of the populations of first, second and third generation immigrants.

Table C2: Descriptive Statistics - Differences between Generations - Marriage with a native

Generation	Natives	First	Second	Third
Turkey	0.00	0.24	0.39	0.08
Morocco	0.00	0.19	0.28	0.03
Surinam	0.00	0.14	0.17	0.66
Indonesia	0.00	0.04	0.09	0.05
Mean outcome	0.43	0.06	0.14	0.44
Nb of Observations	129681	919468	163107	1933

Notes: This table reports the composition by origin country of the populations of first, second and third generation immigrants followed in Figure 1 - subfigure “Marriage with a native”.

Table C3: Convergence - Contraception Age16

Contraceptive usage at age 16				
<i>2nd</i> Generation	0.08*** (0.002)	0.07*** (0.003)	0.08*** (0.003)	0.06*** (0.004)
<i>3rd</i> Generation	0.38*** (0.004)	0.27*** (0.004)	0.35*** (0.004)	0.35*** (0.005)
N	211007	211002	195994	150601
R^2	0.05	0.11	0.09	0.06
Mean	0.15	0.15	0.15	0.17

Notes: This table presents estimates of the equation 1. The dependent variables is having used hormonal contraception at least once by the age of 16. The first column corresponds to models without controls, the second to models with origin countries fixed effects, the third to models which include primary school fixed effects and the fourth to models with parents’ cumulated earnings since 1999 and parents’ birth year fixed effects (entering separately for each parent). The baseline category comprises first-generation immigrants.

Table C4: Convergence - Contraception Age 20

Contraceptive usage at age 20				
2nd Generation	0.10*** (0.004)	0.09*** (0.004)	0.10*** (0.004)	0.05*** (0.006)
3rd Generation	0.50*** (0.007)	0.29*** (0.008)	0.42*** (0.008)	0.40*** (0.009)
N	147197	147189	135211	102731
R^2	0.03	0.16	0.10	0.07
Mean	0.46	0.46	0.46	0.51

Notes: This table presents estimates of the equation 1. The dependent variables is having used hormonal contraception at least once by the age of 20. The first column corresponds to models without controls, the second to models with origin countries fixed effects, the third to models which include primary school fixed effects and the fourth to models with parents' cumulated earnings since 1999 and parents' birth year fixed effects (entering separately for each parent). The baseline category comprises first-generation immigrants.

Table C5: Converge - Marriage native

Marriage with a native			
2nd Generation	0.08*** (0.001)	0.15*** (0.001)	0.12*** (0.001)
3rd Generation	0.60*** (0.008)	0.66*** (0.008)	0.56*** (0.007)
N	1084508	1084506	1084500
R^2	0.01	0.04	0.23
Mean	0.15	0.15	0.15

Notes: This table presents estimates of the equation 1. The dependent variables is marrying a native. The first column corresponds to models without controls (besides age and gender), the second to models with origin countries fixed effects and the third to models with parents' cumulated earnings since 1999 and parents' birth year fixed effects (entering separately for each parent). The baseline category comprises first-generation immigrants.

D More results on educational convergence

Table D1: Descriptive Statistics Differences between Generations

Generation	Natives	First	Second	Third
Nb of Observations	35610	75577	395336	30055
Age	14.08	14.80	14.25	14.12
Havo/Vwo	0.44	0.24	0.29	0.33
Cito Zscore Maths	0.06	- 0.33	- 0.26	- 0.27
Cito Zscore Language	0.11	- 0.56	- 0.43	- 0.18
Cito Score	535.97	529.87	531.09	532.58
Family Wage	9.84	4.53	7.40	8.98
Age Mother	45.09	41.66	43.20	41.23
Age Father	47.53	47.45	47.70	43.89
Mother College	0.47	0.25	0.36	0.65
Father College	0.44	0.20	0.33	0.51
Mother Below College	0.08	0.41	0.35	0.11
Father Below College	0.06	0.26	0.24	0.08
Iran		0.04	0.01	
Iraq		0.11	0.02	
Afghanistan		0.12	0.01	
Syria		0.08	0.01	
Turkey		0.10	0.27	0.13
Morocco		0.09	0.28	0.08
Surinam		0.10	0.19	0.47
Indonesia		0.01	0.05	0.24

Notes: This table reports descriptive statistics of the population of natives, first, second and third generation immigrants with a non-Western background followed in Figure 2. It reports educational outcomes, family characteristics, family (cumulated) labor earnings since 1999, parents' age and education together with the composition by origin country of the populations of first, second and third generation immigrants.

Table D2: Education - Detailed Results

Study in Academic track				
2 nd Generation	0.03*** (0.001)	0.06*** (0.002)	-0.01** (0.003)	-0.04*** (0.002)
3 rd Generation	0.05*** (0.002)	0.05*** (0.003)	-0.03*** (0.004)	-0.04*** (0.003)
N	500968	500960	243347	328747
R ²	0.00	0.04	0.08	0.06
Mean	0.13	0.13	0.15	0.14

Notes: This table presents estimates of the equation 1. The dependent variable is a dummy for studying in the academic track. The first column reports coefficients without controls (besides gender), the second reports models with origin countries fixed effects, the third column includes primary school fixed effects and the fourth includes parents' cumulated earnings since 1999 and parents' birth year fixed effects (entering separately for each parent). The baseline category comprises first-generation immigrants.

Table D3: Education - Detailed Results

Study in Academic or Professional track				
2 nd Generation	0.05*** (0.002)	0.09*** (0.002)	-0.01*** (0.004)	-0.07*** (0.003)
3 rd Generation	0.07*** (0.003)	0.07*** (0.004)	-0.04*** (0.005)	-0.06*** (0.005)
N	437782	437775	242530	296485
R ²	0.01	0.05	0.09	0.07
Mean	0.29	0.29	0.33	0.32

Notes: This table presents estimates of the equation 1. The dependent variable is a dummy for studying in the professional or academic track. The first column reports coefficients without controls (besides gender), the second reports models with origin countries fixed effects, the third column includes primary school fixed effects and the fourth includes parents' cumulated earnings since 1999 and parents' birth year fixed effects (entering separately for each parent). The baseline category comprises first-generation immigrants.

Table D4: Education - Detailed Results

Cito Z-Score Mathematics				
2 nd Generation	0.05*** (0.008)	0.15*** (0.008)	0.04*** (0.008)	-0.08*** (0.012)
3 rd Generation	0.04*** (0.011)	0.09*** (0.012)	-0.04*** (0.011)	-0.11*** (0.015)
N	254846	254837	250399	182560
R ²	0.03	0.05	0.11	0.06
Mean	-0.28	-0.28	-0.28	-0.24

Notes: This table presents estimates of the equation 1. The dependent variable is Cito mathematics z-score. The first column reports coefficients without controls (besides gender), the second reports models with origin countries fixed effects, the third column includes primary school fixed effects and the fourth includes parents' cumulated earnings since 1999 and parents' birth year fixed effects (entering separately for each parent). The baseline category comprises first-generation immigrants.

Table D5: Education - Detailed Results

Cito Z-Score Language				
2 nd Generation	0.12*** (0.008)	0.27*** (0.008)	0.11*** (0.008)	-0.07*** (0.012)
3 rd Generation	0.33*** (0.011)	0.31*** (0.012)	0.17*** (0.011)	0.10*** (0.015)
N	254846	254837	250399	182560
R ²	0.02	0.08	0.13	0.09
Mean	-0.43	-0.43	-0.42	-0.36

Notes: This table presents estimates of the equation 1. The dependent variable is Cito language z-score. The first column reports coefficients without controls (besides gender), the second reports models with origin countries fixed effects, the third column includes primary school fixed effects and the fourth includes parents' cumulated earnings since 1999 and parents' birth year fixed effects (entering separately for each parent). The baseline category comprises first-generation immigrants.

Table D6: Education - Detailed Results

	Total Cito Score			
2 nd Generation	1.04*** (0.077)	2.42*** (0.082)	0.93*** (0.078)	-0.83*** (0.119)
3 rd Generation	2.17*** (0.103)	2.37*** (0.111)	0.83*** (0.104)	-0.03 (0.142)
N	272620	272613	268198	196109
R ²	0.01	0.05	0.12	0.07
Mean	531.07	531.07	531.09	531.67

Notes: This table presents estimates of the equation 1. The dependent variable is Cito total score. The first column reports coefficients without controls (besides gender), the second reports models with origin countries fixed effects, the third column includes primary school fixed effects and the fourth includes parents' cumulated earnings since 1999 and parents' birth year fixed effects (entering separately for each parent). The baseline category comprises first-generation immigrants.

E More results on France

E.1 Cultural convergence

Table E1: Descriptive Statistics

Age	12.40
% Boys	0.51
% North-Africa	0.72
% Turkey	0.25
% Middle-East	0.02
N Obs	10614

Notes: This table reports descriptive statistics of the population of first, second and third generation immigrants from Morocco, Algeria, Tunisia, Turkey, Libya, Egypt and the Middle East followed in Table 3. It reports the mean age, share of boys together with the composition by region of the World.

Table E2: Convergence - Cultural Outcome - TeO2 - Robustness

Having an Arab/Muslim first-name				
2^{nd} Generation	-0.09** (0.039)	-0.09** (0.039)	-0.11*** (0.039)	-0.09** (0.039)
3^{rd} Generation	-0.20*** (0.040)	-0.20*** (0.040)	-0.23*** (0.039)	-0.18*** (0.040)
Gender and Age	✓	✓	✓	✓
Origin FE		✓		
Parent's age			✓	
Parents' education				✓
N	10594	10594	10594	10466
r2	0.03	0.03	0.05	0.04
Mean	0.52	0.52	0.52	0.52

Notes: This table reports coefficients from equation 1. The outcome variable is a dummy taking value one if someone has an Arab/Muslim first name. The first column correspond to models without controls (besides gender and age), the second includes origin countries fixed effects, the third parents' age (interacted with their gender) and the fourth parents' education (interacted with their gender). The baseline category comprises first-generation immigrants. Compared to table 3, children with one parent first-generation immigrant and one parent second-generation immigrant are classified as third-generation (instead of being classified as second). The descriptive statistics for this sample are presented in table E1.

E.2 Educational convergence

Table E3: Difference Between Generations - First names - TeO2

Father		Mother		Mean	SE	N Obs
Native	1 st G	Native	1 st G			
First Generation						
	✓		✓	63.53	3.70	170
Second Generation						
	✓		✓	59.40	0.75	4,308
	✓		✓	47.63	1.87	716
✓			✓	47.39	2.38	441
	✓			60.72	1.27	1,474
		✓	✓	56.49	1.52	1,071
Third Generation						
		✓		50.36	1.61	961
		✓	✓	27.36	1.61	764
✓			✓	19.46	1.49	709

Notes: This table reports the average probability of having a Arab/Muslim first-name among first, second, and third-generation immigrants. The results are further categorized by each parent's migration status, specifying whether the parent is a first or second-generation immigrant of non-Western origin (from Morocco, Algeria, Tunisia, Turkey, Libya, Egypt and the Middle East) or a native. The descriptive statistics for this sample are presented in table E1.

Table E4: Descriptive Statistics

Age	27.91
% Boys	0.49
% North-Africa	0.66
% Turkey	0.33
% Middle-East	0.01
N Obs	1643

Notes: This table reports descriptive statistics of the population of first, second and third generation immigrants from Morocco, Algeria, Tunisia, Turkey, Libya, Egypt and the Middle East followed in Figure 3. It reports the mean age, share of boys together with the composition by region of the World.

Table E5: Educational Outcomes - Detailed - TeO2

Not dropping out				
2 nd Generation	0.09***	0.09***	0.08***	0.08***
	(0.031)	(0.031)	(0.031)	(0.031)
3 rd Generation	0.14***	0.13***	0.11***	0.09***
	(0.034)	(0.034)	(0.035)	(0.035)
N	2264	2264	2264	2234
r2	0.01	0.02	0.02	0.04
Mean	0.85	0.85	0.85	0.85
Finishing High School				
2 nd Generation	0.09**	0.09**	0.07*	0.09**
	(0.039)	(0.038)	(0.038)	(0.038)
3 rd Generation	0.12***	0.12***	0.05	0.06
	(0.043)	(0.043)	(0.044)	(0.044)
N	2264	2264	2264	2234
r2	0.03	0.05	0.06	0.08
Mean	0.72	0.72	0.72	0.72
High School Academic Track				
2 nd Generation	0.09**	0.10**	0.08*	0.10**
	(0.043)	(0.042)	(0.042)	(0.042)
3 rd Generation	0.13***	0.13***	0.07	0.09*
	(0.048)	(0.048)	(0.049)	(0.049)
N	2264	2264	2264	2234
r2	0.04	0.05	0.05	0.09
Mean	0.57	0.57	0.57	0.57
Some college				
2 nd Generation	0.08*	0.08*	0.06	0.08*
	(0.046)	(0.045)	(0.045)	(0.045)
3 rd Generation	0.13**	0.13**	0.07	0.07
	(0.053)	(0.053)	(0.054)	(0.054)
N	1589	1589	1589	1568
r2	0.04	0.05	0.05	0.11
Mean	0.46	0.46	0.46	0.46
Age and gender	✓	✓	✓	✓
Origin country FE		✓		
Age parents			✓	
Education parents				✓

Notes: This table reports estimates of equation 1. The dependent variables are dummies corresponding to level of achieved education - “Not dropping out”, “Finishing High School”, pursuing academic track in high school “Academic track” and “Some College”. The first column correspond to models without controls (besides gender and age), the second includes origin countries fixed effects, the third parents’ age (interacted with their gender) and the fourth parents’ education (interacted with their gender). The baseline category comprises first-generation immigrants. The sample is composed of all immigrants of first, second and third generation immigrants observed in TeO2. The samples for the outcomes “Not dropping out” “Finishing High School” and “High School Academic Track” are restricted to children who were at least 18 years old at the time of the survey, the age limit was 23 for those observed with the outcome “Some college”.

F More results on Heterogeneity

F.1 By family type

Table F1: Differences Between Generations - Contraception - Age 16

Father			Mother			Mean	SE	N Obs
Native	1 st G	2 nd G	Native	1 st G	2 nd G			
			First Generation					
	✓			✓		6.05	0.15	26,034
			Second Generation					
	✓			✓		7.19	0.07	121,650
	✓		✓			40.86	0.35	19,313
✓				✓		30.86	0.38	14,866
	✓				✓	17.28	0.36	10,748
		✓		✓		16.56	0.49	5,870
			Third Generation					
		✓			✓	29.42	0.79	3,321
		✓	✓			50.76	0.76	4,314
✓					✓	49.04	0.74	4,547

Notes: This table reports the mean usage rate of hormonal contraception by age 16 among first, second, and third-generation immigrants. The results are further categorized by each parent's migration status, specifying whether the parent is a first or second-generation immigrant of non-Western origin or a native.

F.2 By origin country

Table F2: Differences Between Generations - Marriage with a native

Father			Mother			Mean	SE	N Obs
Native	1 st G	2 nd G	Native	1 st G	2 nd G			
			First Generation					
	✓			✓		10.58	0.08	154,154
			Second Generation					
	✓			✓		9.51	0.08	122,209
	✓		✓			64.83	0.38	15,514
✓				✓		72.57	0.40	12,597
	✓				✓	41.80	0.90	2,976
		✓		✓		51.66	1.11	2,021
			Third Generation					
		✓			✓	52.74	2.93	292
		✓	✓			80.83	1.46	725
✓					✓	78.45	1.48	775

Notes: This table reports the average probability of marrying a native among first, second, and third-generation immigrants. The results are further categorized by each parent's migration status, specifying whether the parent is a first or second-generation immigrant of non-Western origin or a native.

Table F3: Contraceptive usage - Differences between Generations and countries

Age	Country	Generation	Mean	Nb of observations
16	Surinam	1	0.15	1348
16	Surinam	2	0.26	30254
16	Surinam	3	0.44	5338
16	Morocco	2	0.06	49980
16	Morocco	3	0.35	939
16	Morocco	1	0.03	2393
16	Indonesia	1	0.16	173
16	Indonesia	2	0.34	8176
16	Indonesia	3	0.55	3177
16	Natives	0	0.43	15737
16	Turkey	2	0.08	48416
16	Turkey	3	0.29	1633
16	Turkey	1	0.05	2453
17	Surinam	1	0.30	1307
17	Surinam	2	0.42	28637
17	Surinam	3	0.62	4683
17	Morocco	3	0.52	749
17	Morocco	1	0.07	2330
17	Morocco	2	0.11	46117
17	Indonesia	2	0.52	7859
17	Indonesia	1	0.25	162
17	Indonesia	3	0.73	2617
17	Natives	0	0.62	14827
17	Turkey	2	0.14	45491
17	Turkey	3	0.41	1353
17	Turkey	1	0.10	2319
18	Surinam	2	0.55	26924
18	Surinam	3	0.75	4105
18	Surinam	1	0.43	1262
18	Morocco	3	0.65	572
18	Morocco	1	0.11	2251
18	Morocco	2	0.16	42289
18	Indonesia	3	0.82	2166
18	Indonesia	1	0.32	154
18	Indonesia	2	0.66	7504
18	Natives	0	0.74	13937
18	Turkey	1	0.15	2221
18	Turkey	2	0.20	42566
18	Turkey	3	0.55	1109
19	Surinam	1	0.55	1226
19	Surinam	3	0.81	3521
19	Surinam	2	0.65	25103
19	Morocco	1	0.18	2144
19	Morocco	2	0.22	38539
19	Morocco	3	0.74	429
19	Indonesia	1	0.42	148
19	Indonesia	2	0.74	7118
19	Indonesia	3	0.88	1721
19	Natives	0	0.81	12962
19	Turkey	3	0.64	887
19	Turkey	2	0.26	39518
19	Turkey	1	0.21	2115
20	Surinam	2	0.71	23133
20	Surinam	3	0.86	3066
20	Surinam	1	0.63	1187
20	Morocco	2	0.29	34622
20	Morocco	3	0.80	332
20	Morocco	1	0.24	2047
20	Indonesia	3	0.92	1354
20	Indonesia	2	0.80	6728
20	Indonesia	1	0.53	131
20	Natives	0	0.86	11967
20	Turkey	2	0.33	36313
20	Turkey	1	0.29	2000
20	Turkey	3	0.70	669

Notes: This table reports average usage rate of hormonal contraception by origin country and age.

Table F4: Educational outcomes - Differences between Generations and countries

Origin country	Generation	Havo/Vwo	Vwo	Cito - Zscore		Cito - Score Total	Nb Obs
				Language	Mathematics		
Natives		0.44	0.23	0.10	0.06	535.91	236641
Surinam	1	0.17	0.06	-0.67	-0.71	527.27	233679
Morocco	1	0.15	0.05	-0.76	-0.46	527.89	250677
Indonesia	1	0.47	0.24	-0.06	0.12	535.28	73850
Turkey	1	0.17	0.06	-0.96	-0.34	527.60	326095
Surinam	2	0.30	0.14	-0.27	-0.36	531.50	190150
Morocco	2	0.24	0.09	-0.55	-0.36	529.92	260537
Indonesia	2	0.49	0.27	0.14	0.10	536.29	61343
Turkey	2	0.21	0.08	-0.75	-0.34	528.87	247968
Surinam	3	0.32	0.15	-0.20	-0.36	532.00	66506
Morocco	3	0.34	0.15	-0.23	-0.29	532.46	35106
Indonesia	3	0.33	0.14	-0.16	-0.23	533.11	39108
Turkey	3	0.30	0.13	-0.38	-0.30	531.49	38567

Notes: This table reports average educational outcomes by origin country and generations. The different outcomes are studying in the professional or academic track on high school - "Havo - Vwo" - studying in the academic track on high school - "Vwo" - Cito total score - "Cito - Total" - and Cito z-score in maths and language - "Cito - Maths" and "Cito - Language".

G More results on Discrimination

Table G1: Negative Bias - Teacher Advice - Robustness

	Recommendation for Academic track					
1 st /2 nd Generation	-0.0257*** (0.0037)	-0.0290*** (0.0038)	-0.0780*** (0.0049)	-0.0086** (0.0039)	-0.0336*** (0.0057)	-0.0266*** (0.0055)
3 rd Generation	-0.0172*** (0.0044)	-0.0308*** (0.0045)	-0.0622*** (0.0072)	-0.0203*** (0.0048)	-0.0303*** (0.0068)	-0.0336*** (0.0064)
Cito Score	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
School FE		✓	✓	✓	✓	✓
Morocco/Turkey			✓	✗		
Boys	✓	✓	✓	✓	✓	
Girls	✓	✓	✓	✓		✓
N Obs	227231	226730	120978	118755	111618	114063
R squared	0.32	0.36	0.34	0.41	0.37	0.38
Mean	0.19	0.19	0.15	0.24	0.19	0.18
N Schools	6383	5882	5001	5740	5145	5179
F-test	7.76	0.38	7.27	11.96	0.58	3.06
P-value	0.01	0.54	0.01	0.00	0.44	0.08

Notes: This table presents coefficients from a regression where the dependent variable is a binary outcome taking value one if primary school teacher recommended that a child studies in the academic (as opposed to professional or vocational) track. This outcome was recorded before primary school children took the Cito exam. All columns control for the total Cito score and year fixed effects. The second column adds school fixed effects, the third only focuses on students with a Moroccan or Turkish background while the fourth one excludes them. The fifth column only looks at boys and the six only at girls. The baseline category is composed of native children. Standard errors, clustered at the school level, are reported in parentheses.

H More results on Peer effects

H.1 More on what's in the main text

H.2 Junior high school

H.3 Educational outcome

Table H1: Balancing Table - Robustness - Moroccan Turkish Background

	Share of native girls in the grade		
Number of siblings	-1.5429*** (0.1254)	0.0347 (0.0327)	0.0055 (0.0297)
Wage Parents	0.3158*** (0.0201)	0.0043 (0.0066)	0.0030 (0.0062)
Age Mother	1.9842*** (0.1708)	0.0476 (0.0658)	0.0331 (0.0637)
Age Father	0.1332 (0.1011)	0.0416 (0.0358)	0.0142 (0.0332)
Age Mother Sq	-0.0218*** (0.0020)	-0.0005 (0.0008)	-0.0005 (0.0007)
Age Father Sq	-0.0016* (0.0010)	-0.0005 (0.0003)	-0.0001 (0.0003)
Mother College	1.7622*** (0.2643)	0.0218 (0.0864)	-0.0264 (0.0815)
Father College	1.8141*** (0.2292)	0.1500* (0.0781)	0.1259* (0.0731)
Mother Below College	-2.5366*** (0.2358)	-0.1646** (0.0779)	-0.0747 (0.0750)
Father Below College	-1.2197*** (0.2228)	0.1468** (0.0745)	0.1120 (0.0690)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend			✓
N Obs	54049	53243	53243
R squared	0.06	0.84	0.88
Mean	17.17	16.83	16.83
F-test	103.78	2.08	0.86
p-value	0.00	0.02	0.57

Notes: This table presents coefficients from a regression where the dependent variable is the percentage of girls whose parents are neither first nor second-generation immigrants. This share is calculated among children in the final grade of primary school. The first column includes origin country and year fixed effects. The second column adds school fixed effects, and the third incorporates a school-specific time trend. Independent variables include the number of siblings, parents' wages during the last year of primary school, parents' age and age squared, and dummy variables for parents' education (college or below) with missing values as the baseline category. The sample is limited to students with a Moroccan or Turkish background. Standard errors, clustered at the school level, are reported in parentheses.

Table H2: Balancing Table - Robustness - Father's earnings

	Average (log) of father's earnings		
Number of siblings	-0.0132*** (0.0021)	-0.0000 (0.0006)	-0.0001 (0.0006)
Wage Parents	0.0066*** (0.0004)	0.0004*** (0.0001)	0.0003** (0.0001)
Age Mother	0.0278*** (0.0028)	-0.0014 (0.0013)	-0.0016 (0.0011)
Age Father	0.0103*** (0.0015)	0.0021*** (0.0007)	0.0009 (0.0007)
Age Mother Sq	-0.0003*** (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Age Father Sq	-0.0001*** (0.0000)	-0.0000*** (0.0000)	-0.0000 (0.0000)
Mother College	0.0286*** (0.0036)	0.0021 (0.0015)	0.0022 (0.0014)
Father College	0.0297*** (0.0032)	0.0029** (0.0013)	0.0012 (0.0012)
Mother Below College	-0.0638*** (0.0038)	-0.0032** (0.0015)	0.0003 (0.0015)
Father Below College	-0.0480*** (0.0037)	0.0003 (0.0015)	0.0005 (0.0014)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend			✓
N Obs	99740	99039	99039
R squared	0.17	0.82	0.86
Mean	10.59	10.59	10.59
F-test	150.52	4.41	1.58
p-value	0.00	0.00	0.11

Notes: This table presents coefficients from a regression where the dependent variable is the average log of father's earnings during the last year of primary school. This average is calculated among children in the final grade of primary school. The first column includes origin country and year fixed effects. The second column adds school fixed effects, and the third incorporates a school-specific time trend. Independent variables include the number of siblings, parents' wages during the last year of primary school, parents' age and age squared, and dummy variables for parents' education (college or below) with missing values as the baseline category. Standard errors, clustered at the school level, are reported in parentheses.

Table H3: Balancing Table - Robustness - Neighborhood information

Share of native in the neighborhood			
Number of siblings	-0.9405*** (0.1387)	0.0105 (0.0160)	0.0013 (0.0141)
Wage Parents	0.3122*** (0.0198)	0.0071** (0.0032)	0.0040 (0.0029)
Age Mother	1.9878*** (0.1523)	-0.0181 (0.0310)	-0.0232 (0.0279)
Age Father	-0.0113 (0.0807)	0.0327* (0.0187)	0.0179 (0.0161)
Age Mother Sq	-0.0215*** (0.0018)	0.0003 (0.0004)	0.0003 (0.0003)
Age Father Sq	-0.0008 (0.0008)	-0.0003* (0.0002)	-0.0002 (0.0002)
Mother College	0.4701** (0.2086)	-0.0660* (0.0376)	-0.0500 (0.0350)
Father College	1.5909*** (0.1809)	-0.0062 (0.0343)	-0.0188 (0.0317)
Mother Below College	-1.7782*** (0.2199)	-0.0434 (0.0348)	0.0022 (0.0314)
Father Below College	-1.4118*** (0.2096)	-0.0195 (0.0343)	-0.0127 (0.0310)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend			✓
N Obs	95705	95020	95020
R squared	0.14	0.95	0.97
Mean	58.10	57.92	57.92
F-test	55.82	3.82	1.48
p-value	0.00	0.00	0.14

Notes: This table presents coefficients from a regression where the dependent variable is the percentage of peers whose parents are neither first nor second-generation immigrants. This share is calculated among people living in the same neighborhood as students. The first column includes origin country and year fixed effects. The second column adds school fixed effects, and the third incorporates a school-specific time trend. Independent variables include the number of siblings, parents' wages during the last year of primary school, parents' age and age squared, and dummy variables for parents' education (college or below) with missing values as the baseline category. Standard errors, clustered at the school level, are reported in parentheses.

Table H4: Peer effects - Robustness - Moroccan or Turkish Background

Contraceptive usage at age 16			
$1^{st}/2^{nd}G$	0.0017*** (0.0001)	-0.0000 (0.0002)	0.0000 (0.0002)
$3^{rd}G$	0.0057*** (0.0007)	0.0042*** (0.0008)	0.0043*** (0.0008)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend		✓	✓
Individual Controls			✓
N Obs	54056	53251	53243
R squared	0.04	0.21	0.22
Mean	0.07	0.07	0.07
F Test	32.59	27.35	28.51
P Value	0.00	0.00	0.00
N clusters	3728	2923	2922

Notes: This table presents estimates of the equation 3. The dependent variable is a binary indicator for having used contraceptives at least once by the age of 16. All models include controls for country of origin and year fixed effects, with additional controls added incrementally. The second column introduces school fixed effects and school-specific time trends. The third adds individual characteristics. These characteristics include child's age, parents' age, parents' education level, number of siblings, and (log) of father's earnings in the last year of primary school. The native share is defined as the percentage of girls in the last year of primary school whose parents are neither first nor second generation immigrants. Coefficients reported are the interaction terms between immigrant generation and native share. The sample is limited to students with a Moroccan or Turkish background. Standard errors are clustered at school level.

Table H5: Peer effects - Robustness - Contraception at age 20

Contraceptive usage at age 20			
$1^{st}/2^{nd}G$	0.0032*** (0.0001)	0.0004 (0.0003)	0.0004 (0.0003)
$3^{rd}G$	0.0023*** (0.0005)	-0.0000 (0.0006)	0.0004 (0.0006)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend		✓	✓
Individual Controls			✓
N Obs	66314	65538	65515
R squared	0.18	0.29	0.29
Mean	0.46	0.46	0.46
F Test	3.14	0.47	0.00
P Value	0.08	0.49	0.95
N clusters	4855	4079	4078

Notes: This table presents estimates of the equation 3. The dependent variable is a binary indicator for having used contraceptives at least once by the age of 20. All models include controls for country of origin and year fixed effects, with additional controls added incrementally. The second column introduces school fixed effects and school-specific time trends. The third adds individual characteristics. These characteristics include child's age, parents' age, parents' education level, number of siblings, and (log) of father's earnings in the last year of primary school. The native share is defined as the percentage of girls in the last year of primary school whose parents are neither first nor second generation immigrants. Coefficients reported are the interaction terms between immigrant generation and native share. Standard errors are clustered at school level.

Table H6: Peer effects - Robustness - Contraception at age 20 - Moroccan or Turkish Background

Contraceptive usage at age 20			
$1^{st}/2^{nd}G$	0.0031*** (0.0002)	0.0011** (0.0005)	0.0011** (0.0005)
$3^{rd}G$	0.0091*** (0.0012)	0.0075*** (0.0017)	0.0078*** (0.0017)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend		✓	✓
Individual Controls			✓
N Obs	36438	35639	35633
R squared	0.03	0.18	0.19
Mean	0.31	0.30	0.30
F Test	25.18	15.48	17.25
P Value	0.00	0.00	0.00
N clusters	3237	2438	2438

Notes: This table presents estimates of the equation 3. The dependent variable is a binary indicator for having used contraceptives at least once by the age of 20. All models include controls for country of origin and year fixed effects, with additional controls added incrementally. The second column introduces school fixed effects and school-specific time trends. The third adds individual characteristics. These characteristics include child's age, parents' age, parents' education level, number of siblings, and (log) of father's earnings in the last year of primary school. The native share is defined as the percentage of girls in the last year of primary school whose parents are neither first nor second generation immigrants. Coefficients reported are the interaction terms between immigrant generation and native share. The sample is limited to students with a Moroccan or Turkish background. Standard errors are clustered at school level.

Table H7: Balancing Table - Contraception age 16 - Robustness - First year of junior high school

	Share of native girls in the grade		
Number of siblings	-0.4199*** (0.1086)	0.0072 (0.0191)	-0.0033 (0.0159)
Wage Parents	0.3520*** (0.0140)	0.0115*** (0.0040)	0.0049 (0.0033)
Age Mother	1.1466*** (0.0988)	0.0389 (0.0330)	0.0328 (0.0269)
Age Father	-0.1127* (0.0575)	-0.0218 (0.0197)	-0.0334* (0.0173)
Age Mother Sq	-0.0118*** (0.0011)	-0.0004 (0.0004)	-0.0003 (0.0003)
Age Father Sq	0.0004 (0.0006)	0.0002 (0.0002)	0.0003* (0.0002)
Mother College	2.3967*** (0.1570)	0.1384*** (0.0467)	0.0639* (0.0372)
Father College	1.9574*** (0.1264)	0.0213 (0.0387)	0.0232 (0.0337)
Mother Below College	-0.7865*** (0.1459)	-0.0254 (0.0426)	-0.0167 (0.0360)
Father Below College	-0.9986*** (0.1352)	-0.0684* (0.0399)	-0.0540 (0.0349)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend			✓
N Obs	160647	159612	159612
R squared	0.12	0.87	0.91
Mean	24.29	24.22	24.22
F-test	122.93	3.24	1.83
p-value	0.00	0.00	0.05

Notes: This table presents coefficients from a regression where the dependent variable is the percentage of girls whose parents are neither first nor second-generation immigrants. This share is calculated among children in the first year of junior high school. The first column includes origin country and year fixed effects. The second column adds school fixed effects, and the third incorporates a school-specific time trend. Independent variables include the number of siblings, parents' wages during the last year of primary school, parents' age and age squared, and dummy variables for parents' education (college or below) with missing values as the baseline category. Standard errors, clustered at the school level, are reported in parentheses.

Table H8: Balancing Table - Contraception age 16 - Robustness - First year of junior high school- Moroccan Turkish Background

	Share of native girls in the grade		
Number of siblings	-1.2371*** (0.1243)	-0.0084 (0.0214)	-0.0152 (0.0183)
Wage Parents	0.3344*** (0.0168)	0.0044 (0.0046)	0.0026 (0.0040)
Age Mother	1.4308*** (0.1306)	0.0162 (0.0436)	-0.0132 (0.0366)
Age Father	-0.1824** (0.0764)	0.0143 (0.0261)	-0.0032 (0.0225)
Age Mother Sq	-0.0156*** (0.0015)	-0.0001 (0.0005)	0.0002 (0.0004)
Age Father Sq	0.0012 (0.0007)	-0.0002 (0.0003)	0.0000 (0.0002)
Mother College	2.5798*** (0.2273)	0.2114*** (0.0675)	0.0887 (0.0551)
Father College	1.9497*** (0.1935)	-0.0349 (0.0554)	-0.0008 (0.0495)
Mother Below College	-1.1703*** (0.1757)	-0.0598 (0.0505)	-0.0236 (0.0454)
Father Below College	-1.2255*** (0.1733)	-0.1027** (0.0488)	-0.0765* (0.0433)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend			✓
N Obs	85116	83954	83954
R squared	0.88	0.92	0.92
Mean	21.41	21.24	21.24
F-test	98.60	2.33	1.19
p-value	0.00	0.01	0.29

Notes: This table presents coefficients from a regression where the dependent variable is the percentage of girls whose parents are neither first nor second-generation immigrants. This share is calculated among children in the first year of junior high school. The first column includes origin country and year fixed effects. The second column adds school fixed effects, and the third incorporates a school-specific time trend. Independent variables include the number of siblings, parents' wages during the last year of primary school, parents' age and age squared, and dummy variables for parents' education (college or below) with missing values as the baseline category. The sample is limited to students with a Moroccan or Turkish background. Standard errors, clustered at the school level, are reported in parentheses.

Table H9: Peer effects - Robustness - First year of junior high school

Contraceptive usage at age 16			
$1^{st}/2^{nd}G$	0.0019*** (0.0001)	0.0002 (0.0002)	0.0002 (0.0002)
$3^{rd}G$	0.0023*** (0.0004)	0.0007** (0.0004)	0.0009** (0.0004)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend		✓	✓
Individual Controls			✓
N Obs	160791	159758	159612
R squared	0.12	0.22	0.22
Mean	0.14	0.14	0.14
F Test	1.06	1.70	3.10
P Value	0.30	0.19	0.08
N clusters	7606	6574	6571

Notes: This table presents estimates of the equation 3. The dependent variable is a binary indicator for having used contraceptives at least once by the age of 16. All models include controls for country of origin and year fixed effects, with additional controls added incrementally. The second column introduces school fixed effects and school-specific time trends. The third adds individual characteristics. These characteristics include child's age, parents' age, parents' education level, number of siblings, and (log) of father's earnings in the last year of primary school. The native share is defined as the percentage of girls in the first year of junior high school whose parents are neither first nor second generation immigrants. Coefficients reported are the interaction terms between immigrant generation and native share. Standard errors are clustered at school level.

Table H10: Peer effects - Robustness - First year of junior high school - Moroccan or Turkish Background

Contraceptive usage at age 16			
$1^{st}/2^{nd}G$	0.0015*** (0.0001)	-0.0002 (0.0002)	-0.0002 (0.0002)
$3^{rd}G$	0.0057*** (0.0006)	0.0037*** (0.0007)	0.0038*** (0.0007)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend		✓	✓
Individual Controls			✓
N Obs	85184	84021	83954
R squared	0.04	0.19	0.20
Mean	0.07	0.07	0.07
F Test	48.45	35.35	36.93
P Value	0.00	0.00	0.00
N clusters	5911	4748	4748

Notes: This table presents estimates of the equation 3. The dependent variable is a binary indicator for having used contraceptives at least once by the age of 16. All models include controls for country of origin and year fixed effects, with additional controls added incrementally. The second column introduces school fixed effects and school-specific time trends. The third adds individual characteristics. These characteristics include child's age, parents' age, parents' education level, number of siblings, and (log) of father's earnings in the last year of primary school. The native share is defined as the percentage of girls in the first year of junior high school whose parents are neither first nor second generation immigrants. Coefficients reported are the interaction terms between immigrant generation and native share. The sample is limited to students with a Moroccan or Turkish background. Standard errors are clustered at school level.

Table H11: Peer effects - Robustness - Education

Study in Academic or Professional track			
$1^{st}/2^{nd}G$	0.0012*** (0.0001)	0.0002 (0.0001)	0.0003* (0.0002)
$3^{rd}G$	0.0022*** (0.0001)	0.0004* (0.0002)	0.0004* (0.0002)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend		✓	✓
Individual Controls			✓
N Obs	217589	202846	202846
R squared	0.05	0.14	0.16
Mean	0.32	0.33	0.33
F Test	39.21	0.73	0.50
P Value	0.00	0.39	0.48
N clusters	5860	5390	5390

Notes: This table presents estimates of the equation 3. The dependent variable is a binary indicator for studying in the professional or academic track in high school. All models include controls for country of origin and year fixed effects, with additional controls added incrementally. The second column introduces school fixed effects and school-specific time trends. The third adds individual characteristics. These characteristics include child's age, parents' age, parents' education level, number of siblings, and (log) of father's earnings in the last year of primary school. The native share is defined as the percentage of peers in the last year of primary school whose parents are neither first nor second generation immigrants. Coefficients reported are the interaction terms between immigrant generation and native share. Standard errors are clustered at school level.

Table H12: Peer effects - Robustness - Education - Morocco Turkish Background

Study in Academic or Professional track			
$1^{st}/2^{nd}G$	0.0007*** (0.0001)	-0.0000 (0.0002)	0.0001 (0.0002)
$3^{rd}G$	0.0017*** (0.0003)	0.0005 (0.0003)	0.0005 (0.0004)
Origin country FE	✓	✓	✓
Year FE	✓	✓	✓
School FE		✓	✓
School time trend		✓	✓
Individual Controls			✓
N Obs	111202	108908	108908
R squared	0.01	0.10	0.13
Mean	0.26	0.26	0.26
F Test	11.62	2.73	1.34
P Value	0.00	0.10	0.25
N clusters	4267	3582	3582

Notes: This table presents estimates of the equation 3. The dependent variable is a binary indicator for studying in the professional or academic track in high school. All models include controls for country of origin and year fixed effects, with additional controls added incrementally. The second column introduces school fixed effects and school-specific time trends. The third adds individual characteristics. These characteristics include child's age, parents' age, parents' education level, number of siblings, and (log) of father's earnings in the last year of primary school. The native share is defined as the percentage of peers in the last year of primary school whose parents are neither first nor second generation immigrants. Coefficients reported are the interaction terms between immigrant generation and native share. The sample is limited to students with a Moroccan or Turkish background. Standard errors are clustered at school level.