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# Ambitious, misaligned, or uncertain? The occupational and educational aspirations of immigrant-origin youth in Germany

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## ABSTRACT

Immigrant-origin students often hold higher *educational* aspirations than native-origin peers, accounting for socioeconomic status and school grades. The consequences of this ‘Immigrant Aspiration Paradox’ (IAP) on their socioeconomic attainment are debated. Although individuals’ *occupational* aspirations and how they compare with their educational aspirations (i.e. their alignment) also affect status attainment, they are understudied in the IAP literature. We contribute to the debate on the benefits of the IAP by investigating immigrant-native gaps in the level, (mis)alignment, and (un)certainly of teenage occupational and educational aspirations and their consequences on educational attainment in Germany. First, we describe immigrant-native gaps in teenage aspirations. Then, we investigate whether these differences mediate immigrant-native gaps in upper secondary attainment and tertiary enrollment. In line with the immigrant optimism theory, Asian-origin and Turkish-origin students are more likely to hold *aligned high* aspirations. On average, immigrant-origin students are less likely to have *aligned low* aspirations compared to native-origin students, and equally likely to hold *misaligned* or *uncertain* aspirations. We find that students from most immigrant-origin groups have a higher upper secondary attainment and tertiary enrollment than native-origin students, net of controls. Large portions of these advantages are mediated by the aspirations of immigrant-origin students, which we interpret as evidence of the benefits of the IAP.

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## KEYWORDS

Immigrant aspiration paradox; occupational aspirations; educational aspirations; aspiration alignment; immigrant optimism

## 1. Introduction

Students with an immigrant background often express higher educational aspirations than their native peers, especially those with a similar socioeconomic status (SES) and school performance (Becker, Gresch, and Zimmermann 2022; Brinbaum and Cebolla-Boado 2007; Salikutluk 2016). This so-called ‘Immigrant aspiration paradox’ (IAP) has

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received much scholarly attention. A key question is whether the IAP will lead to benefits for immigrant-origin children and reduce migrant inequalities in the long run (Dollmann et al. 2023; Tjaden and Hunkler 2017). On the one hand, higher educational aspirations should lead to higher attainment for immigrant-origin children (Khattab 2015; Sewell, Haller, and Ohlendorf 1970). On the other hand, immigrant-origin students may lack the academic and socioeconomic resources to sustain their ambitious plans, causing them to drop out of education and have worse outcomes (Tjaden and Hunkler 2017). The evidence for this ‘optimism trap’ argument is currently mixed (Dollmann et al. 2023; Dollmann and Weißmann 2020; Engzell 2019; Ferrara 2022). Further research is required to understand the long-term benefits of the IHP for the educational and occupational attainment of immigrant-origin students.

This debate is partly unresolved because few studies are able to measure the relation between immigrant-native gaps<sup>1</sup> in aspirations and gaps in subsequent attainment using longitudinal data. A group of studies analyze the consequences of immigrant-native gaps in *the choice* of upper secondary school tracks on their upper secondary attainment and tertiary enrollment (Birkelund 2020; Dollmann et al. 2023; Dollmann and Weißmann 2020; Ferrara 2022). Some find that migrant ambition may lead to greater dropout, neutralizing its benefits (Dollmann and Weißmann 2020). Others find a net beneficial effect on educational attainment (Dollmann et al. 2023), although ambitious track choices may still reduce graduation grades for immigrant-origin students, with consequences for their attainment beyond secondary education (Birkelund 2020; Ferrara 2022). Further research is required to establish the consequences of the higher ambition of immigrant-origin students and, specifically, their higher aspirations.

In this article, we contribute to the debate on the benefits of the IAP by investigating immigrant-native gaps in teenage *occupational and educational* aspirations. In addition to the level of students’ aspirations, we are interested in their *(mis)alignment and (un)certainity*, because they strongly predict subsequent attainment. A large literature shows that teenagers with misaligned, uncertain, or aligned low teenage aspirations are more likely to drop out of education, attain lower degrees, be unemployed, and earn lower wages (Morgan et al. 2013; Sabates, Harris, and Staff 2011; Staff et al. 2010; Yates et al. 2011). Building a more complex picture of the IAP, which intersects students’ educational and occupational aspirations, can better inform us about the consequences of the IAP for students’ attainment. For example, if, in addition to holding more ambitious *educational* aspirations immigrant-origin students are also more likely to have uncertain or misaligned *occupational* goals, the benefits of their ambitions may be reduced. If immigrant-origin students with low educational aspirations tend to have clear occupational goals, then their outcomes may be improved. Our first research question is: are there immigrant-native gaps in the levels, alignment and certainty of occupational, and educational aspirations?

Based on the findings from the literature, we can expect any immigrant-native differences in these aspirations to be consequential for gaps in later attainment. However, going beyond descriptive results, we wish to measure the extent to which the IAP accounts for immigrant-native gaps in subsequent attainment. Using longitudinal information on students’ academic careers, we are able to do this for educational outcomes. We investigate whether immigrant-native gaps in teenage aspirations can explain (i.e. mediate) immigrant-native gaps in upper secondary attainment and tertiary enrollment.

In some additional analyses, we also investigate whether the impact of students' aspirations on their attainment varies depending on their migration background (i.e. we also test moderation effects). Our second research question is: do immigrant-native gaps in teenage occupational and educational aspirations explain immigrant-native gaps in upper secondary attainment and tertiary enrollment?

We use the German data from the Children of Immigrants Longitudinal Survey in Four European Countries (CILS4EU) (Kalter, Kogan, and Dollmann 2021). Adolescents were interviewed about their educational and career aspirations at the beginning of the study (age = 15/16) and were then regularly surveyed over a period of eight years. This allows us to examine the extent to which educational and career aspirations have influenced respondents' educational attainment. Although the majority of the literature on the consequences of aspiration alignment and certainty is based on the UK and the USA, Germany is a particularly suitable case to address our research questions. Due to the strong stratification of secondary education, educational and occupational paths are more strongly tied, and adolescents are encouraged to contemplate their careers at an early age (Rudolphi and Salikutluk 2021; Wicht 2016). This suggests that occupational aspirations and their alignment with educational aspirations may be especially relevant in the German context.

Our paper contributes to the literature in several ways. First, we bridge the gap between the literature on the consequences of aspiration alignment and certainty with the literature on the IAP. So far, the former has not investigated migrant inequalities, and the latter has given scarce attention to the role of occupational aspirations and their interplay with educational aspirations. Second, by doing so, we contribute to the debate on the consequences of IAP. By measuring immigrant-native gaps in the level, alignment, and certainty of teenage aspirations, we provide deeper insight into their realizability and their likely consequences for both educational and occupational outcomes. We estimate some of these consequences by measuring the extent to which immigrant-native gaps in teenage aspirations mediate gaps in subsequent educational outcomes.

## 2. Theoretical background

### 2.1. *The consequences of the immigrant aspiration paradox*

A large body of sociological literature suggests that educational aspirations are a key predictor of educational attainment and a mechanism of social stratification (Andrew and Hauser 2011; Khattab 2015; Sewell et al. 2003). Educational aspirations are associated with educational effort, achievement, track choices, and ultimately, attainment (Domina, Conley, and Farkas 2011; McCulloch 2017; Morgan 2005; Zhang et al. 2011). There is abundant longitudinal evidence confirming these relationships, although estimates are attenuated in studies with stronger causal identification strategies (Fishman 2019, 2022; Morgan 2004).

In principle, it is possible to distinguish between idealistic and realistic aspirations (Haller 1968). Idealistic aspirations refer to desired attainment regardless of possible constraints, while realistic aspirations consider possible limitations. Despite theoretical differences, both are of substantive interest, and their determinants and consequences overlap empirically (Khattab 2015; Portes et al. 2010; Stocké 2007). In this study, we

focus on idealistic aspirations because they were surveyed for both educational and career goals in the CILS4EU.

A large body of literature documents an immigrant aspiration paradox: immigrant-origin students from certain national origin groups have higher educational aspirations, especially after accounting for their SES and academic achievement (Brinbaum and Cebolla-Boado 2007; Fernández-Reino 2016; Salikutluk 2016). In Germany, students with a Turkish background hold especially high educational aspirations, while students from other migrant groups hold similar aspirations as their native-origin peers (Becker, Gresch, and Zimmermann 2022; Salikutluk 2016). Despite the extensive research on the topic, there is still an ongoing debate on whether the ambitious aspirations of immigrant-origin children will lead to long-term benefits or unrealized goals (Dollmann et al. 2023; Tjaden and Hunkler 2017).

On the one hand, the higher aspirations of the children of immigrants are often seen as an expression of so-called ‘immigrant optimism’ or immigrant selectivity (Engzell 2019; Fernández-Reino 2016; Kao and Tienda 1995). Through higher aspirations, these migrant resources encourage immigrant-origin students to enroll in more prestigious tracks, which should lead to higher educational and occupational attainment (Dollmann and Weißmann 2020; Jonsson and Rudolphi 2011). On the other hand, some contend that immigrant-origin students may be over-ambitious given their SES and school achievement. They may lack the academic and socioeconomic resources to sustain their ambitious plans, which may eventually cause them to dropout from education and have a lower attainment – an argument known as the ‘optimism trap’ (Engzell 2019; Tjaden and Hunkler 2017).

There is some evidence on this debate coming from studies on the consequences of immigrant-native gaps in educational *track choices*, which are conceptually and empirically related to educational aspirations (Breen and Goldthorpe 1997; Morgan 2005). The ambitious track choices of immigrant-origin students may lead them to have lower school grades and socioeconomic standings when they enroll in demanding academic tracks (Birkelund 2020; Ferrara 2022). This causes them to later dropout more often from upper secondary education (Birkelund 2020; Dollmann and Weißmann 2020). In some cases the dropout rate may be so large that it offsets the benefits of ambitious track choices (Dollmann and Weißmann 2020). Others find a net beneficial effect on educational attainment (Dollmann et al. 2023), although ambitious track choices may still reduce graduation grades for immigrant-origin students, with consequences for their attainment beyond secondary education (Birkelund 2020; Ferrara 2022). Further research is required to determine the benefits of the ambition of immigrant-origin students, with a specific focus on their aspirations and on outcomes beyond upper secondary attainment.

## 2.2. Occupational aspirations, educational aspirations, and status attainment

Much attention is devoted to educational aspirations, but occupational aspirations also play a significant role in models of status attainment, which has been empirically confirmed (Beal and Crockett 2010; Morgan et al. 2013; Sewell, Haller, and Ohlendorf 1970). Following the work of Schneider and Stevenson (1999), significant scholarly attention has been devoted specifically to the interplay of occupational and educational

aspirations (Goyette 2008; Morgan et al. 2013; Schmitt and Faas 2016). According to this line of research, the youth face increasingly complex and individualized school-to-work transitions, which are harder to predict (Côté and Bynner 2008). As a result, they are increasingly ‘directionless’ in their planning of the future (Rosenbaum 2011; Schneider and Stevenson 1999) and their occupational and educational aspirations are increasingly becoming decoupled (Goyette 2008). Students may have a poorer understanding of the labor market and the steps required to attain a certain occupation, which is reflected in misaligned or uncertain aspirations (Morgan et al. 2013; Schmitt and Faas 2016; Schneider and Stevenson 1999).

Teenagers holding misaligned aspirations (i.e. over- or under-estimating the level of education required for their desired occupation) or uncertain aspirations (i.e. unsure plans) are more likely to have unstable educational and occupational careers, with higher chances of early dropout, occupational mismatch and job changes. This is empirically verified in a number of longitudinal studies. Compared to teenagers with aligned high aspirations, those with misaligned and uncertain aspirations are more likely to later drop out of education (Yates et al. 2011), attain lower degrees (Morgan et al. 2013; Schmitt and Faas 2016), and be unemployed and earn lower wages (Schmitt and Faas 2016; Staff et al. 2010; Yates et al. 2011). Teenagers holding aligned and low aspirations also tend to have worse educational and occupational outcomes later in life (Sabates, Harris, and Staff 2011; Yates et al. 2011).

The literature on the IAP is almost exclusively focused on educational aspirations [see (Feliciano and Rumbaut 2005; Portes et al. 2010; Wicht 2016) for some exceptions]. However, jointly investigating teenagers’ educational and occupational aspirations can inform us about their likely consequences for attainment. If immigrant-origin students with ambitious educational goals are also more likely to have mismatched or uncertain occupational aspirations, then the benefits of their ambitious educational aspirations may be reduced. Similarly, if immigrant-origin students who already have low educational aspirations also have aligned low or uncertain occupational aspirations, then their outcomes may be worse.

The literature on aspiration misalignment and uncertainty does not explicitly address migrant inequalities. However, as we will outline in the next section, we can expect immigrant-origin students to be more likely to have misaligned and uncertain aspirations, which could affect their subsequent attainment. This motivates our first research question: are there immigrant-native gaps in the extent to which students’ occupational and educational aspirations are high, aligned, and uncertain? Using longitudinal information on students’ academic careers, we can test the extent to which any gaps in aspirations can explain immigrant-native gaps in subsequent educational outcomes. Our second research question is: do immigrant-native gaps in teenage occupational and educational aspirations explain immigrant-native gaps in upper secondary attainment and tertiary enrollment?

### 2.3. Hypotheses

Three main theories have been used to explain the IAP. According to the theory of *blocked opportunities*, immigrant families expect discrimination in the labor market, so they push their children to stay longer in education and aim for more prestigious

titles to compensate (Heath and Brinbaum 2007; Salikutluk 2016). According to the *lack of information* theory, immigrant parents are less knowledgeable about the destination country's educational system because they may have been educated elsewhere or may face linguistic barriers (Kao and Tienda 1998). This may cause them to overestimate the benefits of more prestigious tracks and the likelihood of their children succeeding in them (Tjaden and Hunkler 2017).

According to the theory of *immigrant optimism*, immigrants leave their countries in search of better life chances and are especially optimistic for their children's future (Kao and Tienda 1995). As a result, they transmit high educational aspirations and a strong drive for upward mobility to their children (Salikutluk 2016). Optimism could be a result of immigrants being positively selected in terms of observable characteristics (e.g. educational attainment) or unobservable characteristics (e.g. personality traits) (Feliciano 2020).

In what follows, we develop specific hypotheses on immigrant-native gaps in aspirations building on these three theories (see Table 1 for a summary). We are interested in the extent to which immigrant- and native-origin students hold *aligned high* aspirations (high educational and occupational aspirations), *aligned low* aspirations (low educational and occupational aspirations), *misaligned under* aspirations (high educational but low occupational aspirations), *misaligned over* aspirations (low educational but high occupational aspirations), and *uncertain* aspirations.

Based on all three theories, we hypothesize that immigrant-origin students should be more likely to hold *aligned high* aspirations (H1). According to immigrant optimism, immigrant families stress the importance of upward social mobility, which should be achieved through higher educational attainment (Kao and Tienda 1995; Salikutluk 2016). High educational aspirations should be a means for the pursuit of better positions in the labor market and should thus be accompanied by high occupational aspirations. Based on the theory of blocked opportunities, we expect that immigrant-origin students

**Table 1.** Summary of hypotheses on immigrant-native gaps in occupational and educational Aspirations.

Hypothesis	Aspiration Combination	Hypothesized gap	Supporting theory	Especially affected groups
H1	Aligned high	More likely for immigrant-origin	Immigrant optimism Expected discrimination	<b>H1a:</b> Turkish <b>H1b:</b> African, Asian, Turkish, first-generation
H2	Misaligned under (education > occupation)	More likely for immigrant-origin	Lack of information Expected discrimination	<b>H1c:</b> First-generation <b>H2a:</b> African, Asian, Turkish, first-generation
H3	Misaligned over (education < occupation)	More likely for immigrant-origin	Lack of information Lack of information	<b>H2b:</b> First-generation First-generation
H4	Uncertain occupational aspirations	More likely for immigrant-origin	Lack of information	First-generation
H5	Aligned low	More likely for immigrant-origin	Lack of information	First-generation
H6	Aligned low	Less likely for immigrant-origin	Immigrant optimism, Expected discrimination, Lack of information	



may hold aligned high aspirations because they try to avoid discrimination by aiming to attain more prestigious academic titles (high educational aspirations) and enter the more meritocratic white-collar labor market (high occupational aspirations) (Jonsson and Rudolphi 2011). Finally, based on their lack of information, immigrant-origin children may systematically overestimate their ability to attain higher degrees and more prestigious occupations, increasing their likelihood of holding aligned high aspirations.

We also hypothesize that immigrant-origin students are more likely to hold *misaligned under* aspirations (H2). Based on the theory of blocked opportunities, we expect that immigrant-origin students may aim for a prestigious academic title but a less prestigious job in order to be overqualified and compensate for discrimination in the labor market. Moreover, based on the theory of lack of information, if immigrant families are less informed on the German educational system and the titles required to access specific occupations (Kao and Tienda 1998), they should be more likely to systematically over- or under-estimate the amount of education required for their desired occupations and hold misaligned aspirations. This supports our hypothesis about *misaligned under* aspirations (H2) but also our additional hypothesis that immigrant-origin students should be more likely to hold *misaligned over* aspirations (H3). Finally, if immigrant-origin children lack information on occupations and the steps required to reach them, they may struggle to decide on a career (Schmitt and Faas 2016) and be more likely to develop *uncertain* aspirations (H4).

In terms of *aligned low* aspirations, we have two contrasting hypotheses. Based on the theory of blocked opportunities, minority youth who anticipate labor market discrimination and thus lower returns to their education could invest less in certificates and expect less prestigious jobs (Becker 1962; Breen and Goldthorpe 1997). In other words, they would be *more likely to hold aligned low aspirations* (H5). At the same time, based on hypotheses H1 to H4, by exclusion, we may also expect the children of immigrants to be *less likely to hold aligned low aspirations* (H6).

In some cases, different theories lead to the same hypothesis about migrant-native gaps (see Table 1). However, since each theory may apply to some migrant groups more than others, we can also develop some sub-hypotheses. In Germany, Turkish immigrants give particular importance to academic titles and upward mobility for their children (Salikutluk 2016) and are especially positively selected in terms of educational attainment (van de Werfhorst and Heath 2019). For these reasons, based on immigrant optimism, we expect Turkish-origin students to be more likely to hold aligned high aspirations (H1a).

Predictions based on blocked opportunities should be strongest for more ‘visible minorities’ who could expect more labor market discrimination (Heath and Brinbaum 2007). In Germany, this includes specific national origin groups – African-, Turkish-, and Asian-origin students – as well as first-generation students, who do not have a mixed German background (Kaas and Manger 2012; Koopmans, Veit, and Yemane 2019; Thijsen et al. 2021). This leads to our more detailed hypotheses about these migrant groups (H1b and H2b). Predictions based on the theory of lack of information should apply especially to first-generation immigrant students, whose parents may have arrived later in Germany and be less informed on the educational system and labor market (Ferrara and Brunori 2024). This justifies our group-specific hypotheses H1c and H2b. We do not develop sub-hypotheses for H3 and H4 since they are only predicted by the theory of lack of information.



Regarding the association between aspirations and attainment, based on the prior literature, we expect that uncertain, misaligned and aligned low aspirations should be associated with a lower educational attainment, compared to aligned and high aspirations (Morgan et al. 2013; Sabates, Harris, and Staff 2011; Schmitt and Faas 2016; Staff et al. 2010; Yates et al. 2011). Based on these findings and on our hypotheses H1–H6, we expect that immigrant-native differences in teenage aspirations should affect immigrant-native gaps in subsequent educational attainment.

Although it is not the main focus of our paper, we will also test whether this association varies (i.e. is moderated) by migration background. Prior evidence suggests that aspiration misalignment and uncertainty may be more consequential for socio-economically disadvantaged students (Yates et al. 2011). Since immigrant-origin students tend to be socio-economically disadvantaged (see descriptive results on parental ISEI across all groups in Table 2 below, for example), these consequences could be even greater for immigrant-origin students, who could experience a cumulative disadvantage (Dicks and Lancee 2018). At the same time, the relationship between educational aspirations and outcomes is often found to be weaker for the children of immigrants (Gil-Hernández and Gracia 2018), which would suggest the opposite effect. Given contrasting expectations, we refrain from drawing specific hypotheses.

### 3. The German context

In international comparisons, the German educational system demonstrates specific characteristics that are relevant for educational aspirations, occupational aspirations, and their links to attainment. Firstly, the first educational transition occurs at an early stage. Following four years of primary education, students are allocated to one of the secondary school tracks in most federal states, often based on their academic performance. Second, the German secondary school system exhibits a high level of stratification compared to other countries. It comprises three main tracks: the lower secondary school track (*Hauptschule*), the intermediate secondary school track (*Realschule*), and the upper secondary school track (*Gymnasium*). Additionally, there are comprehensive schools where students are taught together but can obtain different qualifications. Fourth, students' educational attainment levels depend on their specific school track. Those who complete upper secondary school are more likely to achieve the highest secondary school qualification (Abitur).

The early assignment of students to different secondary school tracks has implications for their educational aspirations, as attending one of the lower tracks reduces the likelihood of adolescents aspiring to graduate from higher secondary school or enrolling in universities (Rudolphi and Salikutluk 2021). Adolescents can start vocational education training (VET) after graduating from lower and intermediate secondary school. One feature of the VET system in Germany is the dual education approach, which combines theoretical classroom instruction with practical on-the-job training. Finally, the Abitur can be obtained as part of Vocational Education and Training (VET). In some cases, it is also possible to study at a university without an Abitur if one has relevant professional experience. The federal states have different regulations, but about 70,000 people without an Abitur studied in Germany in 2022 (Centre for Higher Education 2023).

**Table 2.** Descriptive statistics by national origin group.

	DEU Avg.	TUR Avg.	FSU Avg.	POL Avg.	EAS EUR Avg.	SOU EUR Avg.	ASIA Avg.	AFR Avg.	OTR Avg.
Immigrant status									
Native	1	0	0	0	0	0	0	0	0
First generation	0	0.09	0.46	0.1	0.12	0.18	0.28	0.14	0.14
Second generation	0	0.67	0.44	0.31	0.3	0.22	0.48	0.21	0.17
2.5 generation +	0	0.23	0.11	0.59	0.58	0.59	0.23	0.65	0.69
Occ & edu aspirations									
Aligned high	0.23	0.27	0.27	0.22	0.22	0.27	0.43	0.19	0.18
Misaligned under	0.05	0.06	0.03	0.05	0.12	0.11	0.09	0.1	0.11
Misaligned over	0.21	0.23	0.25	0.19	0.18	0.21	0.16	0.14	0.16
Aligned low	0.31	0.23	0.18	0.25	0.31	0.26	0.19	0.22	0.22
Uncertain	0.2	0.21	0.27	0.29	0.16	0.14	0.13	0.36	0.33
Occupational aspirations									
Manager/professional/technician	0.44	0.5	0.52	0.41	0.41	0.48	0.58	0.33	0.34
Other occupations	0.36	0.29	0.21	0.3	0.44	0.38	0.29	0.32	0.34
Don't know	0.2	0.21	0.27	0.29	0.16	0.14	0.13	0.36	0.33
Educational aspirations									
Tertiary	0.37	0.41	0.46	0.41	0.42	0.43	0.59	0.43	0.48
Non-tertiary	0.61	0.58	0.52	0.59	0.56	0.57	0.4	0.52	0.49
Don't know	0.02	0.01	0.01	0	0.02	0	0	0.04	0.03
Gender									
Female	0.47	0.54	0.44	0.58	0.46	0.44	0.46	0.52	0.63
Parental education									
Primary or less	0.02	0.24	0.04	0.08	0.08	0.12	0.22	0.16	0.13
Secondary	0.77	0.68	0.65	0.73	0.63	0.72	0.49	0.54	0.45
Tertiary	0.21	0.08	0.3	0.18	0.29	0.16	0.29	0.3	0.41
Parental occupation									
Parental occupation (ISEI)	52.37	32.69	42.57	43.72	49.16	41.37	43.84	49.13	54.66
Tests									
Cognitive test (wave 1)	20.06	18.12	19.5	20.16	18.91	19.4	19.6	18.45	19.46
Language test (wave 1)	13.57	8.59	11.81	12.23	11.88	11.9	11.15	12.3	12.87
School math grades									
Passing marks	0.26	0.35	0.28	0.24	0.34	0.34	0.37	0.36	0.31
Middle marks	0.39	0.42	0.39	0.35	0.33	0.28	0.27	0.41	0.38
Top marks	0.35	0.23	0.32	0.41	0.33	0.38	0.36	0.23	0.31
School language grades									
Passing marks	0.15	0.19	0.2	0.14	0.16	0.15	0.2	0.18	0.15
Middle marks	0.47	0.54	0.51	0.45	0.52	0.4	0.42	0.47	0.41
Top marks	0.38	0.27	0.29	0.41	0.33	0.45	0.38	0.35	0.44
School track									
Lower track	0.08	0.31	0.15	0.15	0.25	0.22	0.15	0.12	0.2
Intermediate track	0.32	0.26	0.41	0.29	0.24	0.36	0.31	0.27	0.2
Upper track	0.32	0.18	0.29	0.3	0.26	0.14	0.39	0.27	0.43
Comprehensive school	0.28	0.26	0.14	0.26	0.25	0.28	0.15	0.34	0.17
Observations	1915	590	220	154	208	184	153	117	145

Notes: Number of cases unweighted, all other estimates are weighted.

Source: Waves 1–2 of the CILS4EU German data, own calculations.

The research on the consequences of aspiration alignment almost exclusively focuses on the US and UK, so results may differ in a more stratified educational system like the German one. On the other hand, occupational aspirations and their alignment with educational aspirations may matter more in the German system, where the educational system and the labor market are more closely tied (Wicht 2016). At the same time, there may be less room for teenage aspirations to have an effect since students are sorted into tracks at an early age and often based on their academic performance (Rudolphi and Salikutluk 2021). However, the system also offers second chances and alternative paths, which are often used by immigrant-origin students (Dollmann and Weißmann 2020).

## 4. Data and methods

### 4.1. Data and analytical sample

We use the German data from the Children of Immigrants Longitudinal Survey in Four European Countries (Kalter, Kogan, and Dollmann 2021). The data is part of a larger representative survey that was also conducted in England, the Netherlands, and Sweden. The German data is a representative sample of ninth-grade students (mainly 14 years old) gathered through a three-level design sampling schools, then classes, and finally, students. The sampling strategy oversampled schools with a higher proportion of immigrants to achieve good coverage of this population. The German sample consisted of 5,013 respondents in Wave 1.

The German part of the CILS4EU survey is a panel with eight waves, following individuals for ten years (until the age of about 25). In this study, we mostly use data from the second wave (when students were 15–16 years old) because respondents were asked about their occupational and educational (idealistic) aspirations. However, we also use data from wave 1 on respondents' scores in cognitive and language tests and data from parental questionnaires in wave 1 to fill in some missing SES data. Moreover, we use information from subsequent waves (3–8) to build measures of students' upper secondary attainment and tertiary enrollment.

Starting from the 4,256 students surveyed in wave 2, we excluded about 13% of observations because they had missing information on one of our variables of interest described below (see Table A1 in the appendix for a detailed description). Our analytical sample for the first part of the analyses on immigrant-native gaps in occupational and educational aspirations is composed of 3,684 students. For our second set of analyses on the impact of occupational and educational aspirations on subsequent outcomes, the analytical sample is reduced to 2,950 students for the analyses on upper secondary attainment and to 2,523 for the analyses on tertiary enrollment.

Sample reductions are due to respondent attrition and students lacking longitudinal data to determine their final outcomes (see the measures section for a detailed description). To account for these sample cuts and attrition, we constructed different sets of probability weights<sup>2</sup> and ran weighted models. All analyses are run with weights to correct for attrition between wave 1 and wave 2 since this is our main wave of interest. In addition, analyses on upper secondary attainment and tertiary enrollment are also run with weights to account for attrition in later waves.

### 4.2. Measures

Our main outcome variable measures the combination of occupational and educational aspirations. It is constructed using two items administered in the second wave of the CILS4EU survey (when students were mostly 15 or 16 years old). The first asked students, 'What is the highest level of education you wish to get?'. We define high educational aspirations as aiming for a university education and low aspirations as the rest. Uncertain educational aspirations were uncommon (less than 2% of the sample), so we aggregated them with low educational aspirations.

The second item asked students, 'What job would you like to have as an adult?'. Answers were coded into ISCO codes and assigned ISEI scores. In our preferred

specifications, we define high occupational aspirations as aspiring for a managerial, professional, or technician job (the first three ISCO major groups) and low aspirations as the rest. We opt for this definition because the question surveying educational aspirations does not distinguish university aspirations into technical and academically oriented universities. To mirror this, we keep aspirations for professional and technical jobs together. In alternative specifications, we also define high occupational aspirations as aspiring only to managerial and professional jobs (the first two ISCO major groups) as well as aspiring to jobs in the top quartile of ISEI score distribution. We replicate analyses using these definitions and present them in the appendix. Since results change somewhat according to the definition used, we comment on appendix results whenever differences arise. In addition to high and low occupational aspirations, we define a third category: those answering ‘I don’t know’ to the survey question.

We intersected these two aspiration variables to create a single categorical variable for joint occupational and educational aspirations, taking on the following five values: aligned high aspirations, aligned low aspirations, misaligned under (aspiring for university but not managerial, technical or professional jobs), misaligned over (aspiring for less than university but to managerial, technical or professional jobs), and uncertain occupational aspirations.

In our second set of analyses, we have two additional outcome variables that measure students’ subsequent educational attainment using longitudinal information in the German CILS4EU data from waves 3 to 8. Our first variable measures Abitur attainment, i.e. obtaining the academic upper secondary degree, as opposed to graduating from other tracks or dropping out of education. Students who could not be followed until their secondary degree completion or the moment they left the educational system were counted as missing for this outcome variable. Our second variable measures enrollment in tertiary education at any point before students’ last observation in the survey (potentially age 25 in wave 8), irrespective of their upper secondary title. We do not condition on abitur attainment to estimate the full unmediated impact of aspirations on tertiary enrollment. An issue with our tertiary enrollment measure is that students could drop out from the survey before age 25. To partially address this concern, we assign a missing value in our dependent variable to all students who drop out from the survey before wave 5 (i.e. before age 19–20, the modal tertiary enrollment age in Germany). We discuss limitations with our measure further in the discussion section of the paper.

Our main independent variable is immigrant background. In line with prior work on the CILS4EU data (Dollmann and Weißmann 2020), we define having an immigrant background as being either foreign-born, the child of an immigrant, or the grandchild of two immigrants [i.e. up to the 3.5th generation – see (Dollmann, Jacob, and Kalter 2014) for a detailed classification]. We compare the outcomes of German-origin students with those of immigrant-origin students, distinguishing the latter in different groups. First, we define origin groups following CILS4EU guidelines [for more information, see (Dollmann, Jacob, and Kalter 2014)] and present results for students from the largest three national origin groups – Turkey, a country of the Former Soviet Union (FSU), and Poland – and from aggregated world regions – Asia, Africa, Eastern Europe, Southern Europe, and other countries. Second, we also split the immigrant-origin group by generation and show results for students from the first, second, and 2.5+ generations.

We define a set of control variables that we use in our models. We capture socioeconomic status using information on parental educational and occupational attainment (measured using ISEI scores) gathered in waves 1 or 2 of CILS4EU and apply the dominance criterion. We define students' academic achievement using their self-reported Math and German grades in their last report card in wave 2 (converted into terciles), as well as their performance in cognitive and language tests in wave 1 of CILS4EU. Finally, we control for students' educational track in wave 1, differentiating between the lower, intermediate, and higher tracks, as well as comprehensive schools.

Table 2 describes the main variables used in this study by students' national origin group. The table shows that about 20% to 30% of students hold aligned high aspirations across all groups, except for Asian students, among whom 43% have aligned high aspirations. Around half of students across all groups have misaligned or uncertain goals, which justifies our interest in these aspirations. About 20% to 30% of students have misaligned aspirations. The majority hold *misaligned over* aspirations, meaning that they overestimate their occupational aspirations compared to their educational aspirations. The share of students with uncertain aspirations varies significantly across groups, between 13% (Asian students) and 36% (African students). German-origin students and students from Eastern Europe are the most likely to have aligned low aspirations (31%).

### 4.3. Analytical strategy

Our analytical strategy is two-fold, reflecting our two main research questions. In the first set of analyses, we measure immigrant-native gaps in occupational and educational aspirations and test hypotheses H1 to H6. First, we measure gaps in the likelihood of having ambitious occupational aspirations using linear probability models controlling for the set of variables described above. Then, we measure gaps in the likelihood of having aligned high, misaligned over, misaligned under, aligned low, and uncertain aspirations using multinomial logistic models controlling for the same set of variables. In the second set of analyses, we investigate the consequences of these gaps. We measure immigrant-native differences in the attainment of Abitur and tertiary enrollment using linear probability models<sup>3</sup> and investigate how they change as we progressively add controls and our measures of individuals' occupational and educational aspirations expressed in wave 2. We also fit some models interacting aspirations and migration background to test possible moderating effects.

## 5. Results

### 5.1. Immigrant-native gaps in occupational and educational aspirations

We begin by analyzing occupational aspirations across national origin groups. Table 3 presents gaps in the likelihood of aspiring to managerial/professional/technician jobs between students from different national-origin groups and native students. Simple gaps obtained from Model 1 show that only FSU- and Asian-origin students are more likely to express high occupational aspirations compared to German-origin students.

**Table 3.** Immigrant-native gaps in aspiring to professional/managerial/technician jobs by migrant origin group.

	M1		M2		M3	
Origin (ref: Native students)						
Turkey	0.051	(0.032)	0.133***	(0.033)	0.159***	(0.033)
FSU	0.083*	(0.037)	0.104**	(0.037)	0.106**	(0.036)
Poland	−0.052	(0.043)	−0.019	(0.043)	−0.025	(0.042)
Eastern Europe	−0.033	(0.044)	−0.029	(0.043)	0.013	(0.042)
South Europe	0.046	(0.047)	0.089	(0.047)	0.117*	(0.046)
Asia	0.145**	(0.051)	0.169***	(0.051)	0.160**	(0.050)
Africa	−0.124*	(0.052)	−0.118*	(0.051)	−0.093	(0.050)
Other	−0.129**	(0.044)	−0.153***	(0.044)	−0.141***	(0.043)
Female	0.163***	(0.016)	0.157***	(0.016)	0.132***	(0.016)
Parental edu (ref: Primary or less)						
Secondary			0.032	(0.036)	−0.010	(0.035)
Tertiary			0.137***	(0.041)	0.060	(0.040)
Parental occupation (ISEI)			0.003***	(0.000)	0.001*	(0.000)
Tests						
Cognitive test (wave 1)					0.010***	(0.002)
Language test (wave 1)					0.003	(0.002)
Math grades (ref: Passing marks)						
Middle marks					0.060**	(0.020)
Top marks					−0.011	(0.022)
Language grades (ref: Passing marks)						
Middle marks					0.075**	(0.023)
Top marks					0.095***	(0.025)
School track (ref: lower)						
Intermediate track					0.117***	(0.028)
Upper track					0.258***	(0.031)
Comprehensive school					0.072**	(0.028)
Observations	3686		3686		3686	
R-squared	0.032		0.064		0.115	

Notes: Estimates obtained from linear probability models using survey weights combined with generated weights to account for attrition between waves 1 and 2. High occupational aspirations are defined as aiming for managerial, professional, or technician occupations (ISCO 1, 2 and 3 major groups), as opposed to aiming for other occupations or having uncertain aspirations. Standard errors in parentheses. \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$

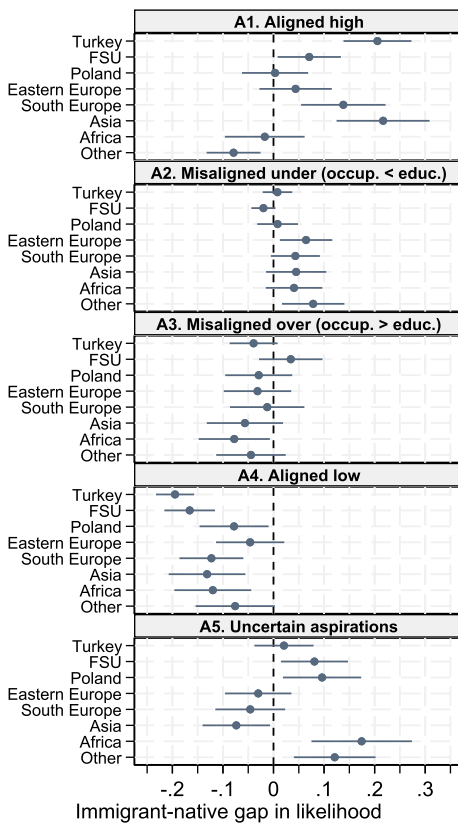
Source: Waves 1 and 2 of the CILS4EU German data, own calculations.

However, once we add our full set of controls (Model 3), students with a Turkish and Southern European background are also more likely to hold ambitious occupational aspirations. All four groups are at least ten percentage points more likely than German-origin students to aim for prestigious jobs. Our results confirm previous findings on immigrant-native gaps in occupational aspirations in Germany (Wicht 2016), but we additionally show that an immigrant advantage also exists for students with an Asian background.

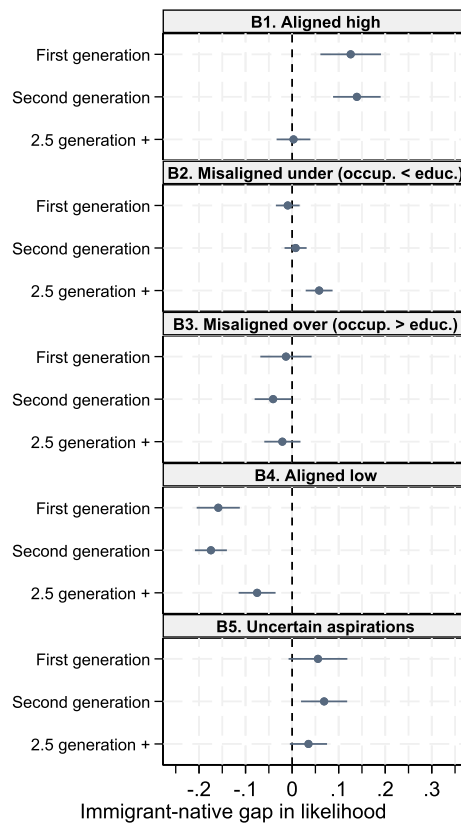
Table A2 in the appendix shows that the immigrant advantage in aspirations is driven by first- and second-generation students and is not found for 2.5+ generation students. Tables A3 and A4 in the appendix show that when we use a more selective definition of high occupational aspirations, excluding technicians or only including occupations in the top quartile of the ISEI score distribution, immigrant advantages grow for all groups and become statistically significant also for Southern European students.

Next, we analyze the gaps in the combination of occupational and educational aspirations. Figure 1 shows differences in the likelihood of holding aligned high, misaligned over, misaligned under, aligned low, and uncertain aspirations between native and immigrant-origin students from different national origin groups (Panel A on the left) and

## A. By origin group



## B. By migrant generation



**Figure 1.** Immigrant-native gaps in occupational and educational aspirations by origin group (left) and immigrant generation (right).

Notes: Estimates obtained from a multinomial logistic model controlling for students' gender, cognitive and language test grades, math and German school marks, school track in wave 1 of the survey, and parental educational and occupational attainment. The model was run using survey weights combined with generated waves to account for attrition between waves 1 and 2. For a definition of the outcomes in each panel, consult the Data and Methods section of the paper. Source: Waves 1 and 2 of the CILS4EU German data, own calculations.

different immigrant generations (Panel B on the right), obtained from a multinomial logistic model with the full set of controls (see Tables A5 and A6 in the online appendix for full coefficient tables).

Our first finding is that students of Asian, FSU, Southern European and Turkish descent are significantly more likely to hold *aligned high* aspirations than other national origin groups and German-origin students (Panel A1). The gap is largest for Turkish and Asian students (21 and 22 percentage points), followed by Southern European and FSU students (14 and 7 percentage points). Panel B1 shows that these advantages are driven by first- and second-generation immigrants. These results confirm hypothesis H1 and especially for Turkish-origin students and Asian students (corroborating H1a and, in part, H1b). We do not find evidence that first-generation students are more likely to hold aligned high aspirations compared to second-generation students (H1c is not



corroborated). These results suggest that immigrant optimism, and perhaps blocked opportunities, may be driving the educational and occupational aspirations of immigrant-origin students.

In contrast with hypothesis H2, Panel A2 shows no substantive immigrant-native differences in the likelihood of overestimating occupational goals compared to educational aspirations. Most groups had a positive coefficient of about 5 percentage points, which (barely) reached conventional statistical significance only for the Eastern European and Other groups. In contrast with hypothesis H2a, we do not find a gap for African, Asian, and Turkish students. Moreover, Panel B2 shows that misaligned over aspirations were not more likely among first-generation students, contrasting hypothesis H2b.

We do not find evidence in favor of hypothesis H3 since no immigrant group is more likely to hold misaligned under aspirations (having high occupational aspirations and low educational aspirations) than native-origin students (Panel A3 and B3). Specifically, we do not find a greater likelihood for first-generation students, which would be the most likely group according to the lack of information theory. Panels A5 and B5 show that H5 is corroborated and H6 is rejected: immigrant-origin students from all national origin groups are *less likely than* German-origin students to have aligned low aspirations. Asian and Turkish students are over 20 percentage points less likely to hold aligned low aspirations. Finally, we find partial support for H4 on the greater likelihood of uncertain occupational aspirations among immigrant-origin students. Although we find a greater prevalence among African-, FSU-, Polish-, and Other origin students, we do not find that uncertain aspirations are more common among first-generation students, as predicted from the lack of information theory.

Figures A1 and A2 in the appendix show that results are comparable when we define high occupational aspirations based on ISEI scores or when we exclude technician jobs from the category of prestigious occupations. In the latter case, Turkish students are somewhat more likely, and Asian students significantly more likely to hold misaligned under aspirations (see Figure A1). This is driven by the fact that they are more likely to aspire to technical jobs and a university degree (results are not shown but available upon request). With our data, we cannot ascertain whether these students were aiming for a *technical university* rather than a general track, which would imply *aligned rather than misaligned* aspirations. Therefore, we do not interpret this result as evidence for H2 but as a possible artifact of this specification. This is further supported by the fact that the results by immigrant generation in Figure A1 mirror those in Figure 1, which also suggests that H2 (and specifically H2a) is not confirmed.

## 5.2. Immigrant-native gaps in attainment and the mediating role of aspirations

In the next step, we investigate immigrant-native gaps in educational attainment and the mediating role of aspirations using the longitudinal data in CILS4EU. Table 4 shows gaps between different national origin groups and German-origin students in the likelihood of attaining the Abitur and enrolling in tertiary education. Starting from simple gaps (Model 1), we add our full set of controls (Model 2) and then our indicator for combinations of educational and occupational aspirations (Model 3). Table A5 in the appendix

**Table 4.** Predicting immigrant-native gaps in educational attainment.

	A: Abitur attainment			B: Tertiary enrollment		
	M1	M2	M3	M1	M2	M3
Origin (ref: Native students)						
Turkey	−0.070 (0.037)	0.078* (0.035)	0.037 (0.035)	−0.118** (0.039)	0.079* (0.032)	0.029 (0.032)
FSU	0.085 (0.043)	0.101** (0.039)	0.075 (0.039)	0.023 (0.045)	0.034 (0.036)	0.004 (0.036)
Poland	0.018 (0.048)	0.017 (0.042)	0.004 (0.042)	0.060 (0.052)	0.075 (0.042)	0.057 (0.041)
Eastern Europe	−0.099* (0.048)	−0.033 (0.042)	−0.041 (0.042)	−0.025 (0.052)	0.014 (0.042)	−0.001 (0.041)
South Europe	0.007 (0.053)	0.109* (0.047)	0.081 (0.046)	−0.048 (0.057)	0.059 (0.045)	0.022 (0.045)
Asia	0.168** (0.059)	0.163** (0.053)	0.129* (0.052)	0.097 (0.062)	0.076 (0.050)	0.040 (0.050)
Africa	−0.082 (0.063)	−0.004 (0.055)	−0.020 (0.055)	0.008 (0.073)	0.070 (0.059)	0.048 (0.058)
Other	−0.070 (0.051)	−0.089* (0.045)	−0.095* (0.045)	0.093 (0.058)	0.027 (0.047)	0.019 (0.046)
Female		0.107*** (0.017)	0.090*** (0.017)		0.027 (0.017)	0.010 (0.016)
Parental edu (ref: Primary or less)						
Secondary		−0.016 (0.037)	−0.014 (0.036)		−0.052 (0.036)	−0.052 (0.036)
Tertiary		0.063 (0.042)	0.037 (0.042)		0.073 (0.042)	0.040 (0.041)
Parental occupation (ISEI)		0.000 (0.000)	0.000 (0.000)		0.002*** (0.000)	0.002*** (0.000)
Tests (wave 1)						
Cognitive test		0.001 (0.003)	−0.001 (0.003)		0.007** (0.002)	0.005* (0.002)
Language test		0.011*** (0.002)	0.009*** (0.002)		0.006* (0.002)	0.004 (0.002)
Math grades (ref: Passing marks)						
Middle marks		0.032 (0.021)	0.021 (0.021)		0.044* (0.020)	0.029 (0.020)
Top marks		0.068** (0.023)	0.055* (0.023)		0.148*** (0.021)	0.134*** (0.021)
Language grades (ref: Passing marks)						
Middle marks		−0.010 (0.024)	−0.024 (0.024)		0.066** (0.024)	0.051* (0.023)
Top marks		−0.028 (0.027)	−0.053* (0.027)		0.114*** (0.026)	0.090*** (0.025)
School track (ref: lower)						
Intermediate		0.229*** (0.029)	0.198*** (0.029)		0.171*** (0.029)	0.136*** (0.029)
Upper track		0.532*** (0.033)	0.451*** (0.034)		0.513*** (0.033)	0.426*** (0.034)
Comprehensive school		0.112*** (0.028)	0.095*** (0.028)		0.086** (0.029)	0.066* (0.029)
Teenage aspirations (ref: Aligned low)						
Aligned high			0.205*** (0.027)			0.240*** (0.026)
Misaligned under			0.090* (0.037)			0.108** (0.035)
Misaligned over			0.066** (0.024)			0.069** (0.023)
Uncertain			0.148*** (0.025)			0.139*** (0.024)
Observations	2950	2950	2950	2523	2523	2523

(Continued)

**Table 4.** Continued.

	A: Abitur attainment			B: Tertiary enrollment		
	M1	M2	M3	M1	M2	M3
R-squared	0.006	0.224	0.239	0.004	0.336	0.359

Notes: Estimates obtained from linear probability models using survey weights combined with generated waves to account for attrition. For a definition of the teenage aspirations, consult the Data and Methods section of the paper. Source: Waves 1–8 of the CILS4EU German data, own calculations.

shows results distinguishing between immigrant generations rather than national origin groups.

Starting with the results on an Abitur attainment (Panel A on the left), we find that Asian-, FSU-, and Turkish-origin students are more likely to complete academic upper secondary education, net of controls (Model 2). Asian-origin students are as much as 16 percentage points more likely than native-origin students to attain the Abitur. Model 3 additionally controls for teenage aspirations. We find that students holding aligned high aspirations are about 21 percentage points more likely to attain the Abitur compared to those with aligned low aspirations. In line with prior literature, we find that students holding misaligned aspirations, that is, only high educational *or* high occupational aspirations, have a lower likelihood of attaining the Abitur than those with aligned high aspirations (11–14 percentage points less). In contrast with the prior literature, we do not find a large penalty associated with holding uncertain occupational aspirations – only about five percentage points compared to those holding aligned high aspirations. Students holding aligned low aspirations had the lowest likelihood of attaining the Abitur.

Comparing estimates from Models 2 and 3 suggests that the immigrant-native differences in teenage aspirations documented in in section 3.1 partly explain immigrant-native gaps in upper secondary attainment. Between Models 2 and 3 of Panel A, the advantage in Abitur completion of Asian-, FSU-, and Turkish-origin is reduced by a factor of at least 20%. For the latter group, it is reduced by over 50% (from about 8 percentage points to a non-statistically significant 4 percentage points), which is consistent with the fact that they are more likely to hold aligned high aspirations (see [Figure 1](#)).

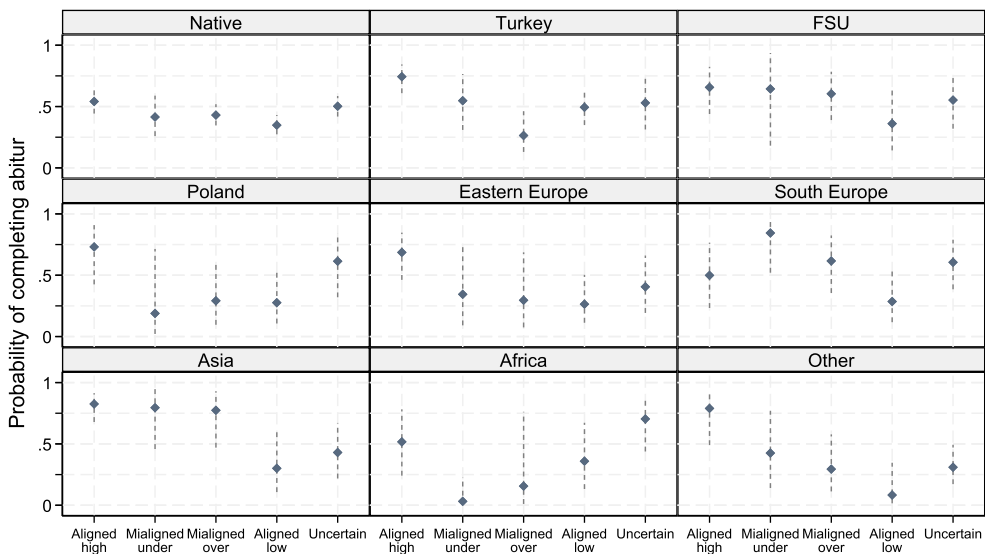
Our estimates on enrollment in tertiary education (Panel B) are broadly in line with those on upper secondary attainment. In Model 2, only Turkish-origin students have a statistically significant advantage in terms of tertiary enrollment, similar to their advantage in terms of upper secondary attainment. For other migrant groups, the gaps are smaller and not statistically significant because imprecisely estimated. However, as seen in Table A6 in the appendix, when pooled together, second-generation students have an overall advantage in terms of tertiary enrollment in Model 2. Model 3 of Panel B shows that aspiration level, alignment, and certainty had a similar effect on tertiary enrollment as they had on upper secondary attainment. Comparing estimates in Model 2 to Model 3 shows that the Turkish-origin advantage in tertiary enrollment is reduced by about 60%. Table A6 shows that the overall second-generation advantage is reduced by about 30%.

We can summarize our findings from [Table 4](#) as follows. We find that immigrant-origin students tend to have a higher Abitur attainment and tertiary enrollment net of controls, although differences are not always precisely estimated (Model 2). In line

with prior literature, teenage aspirations (and their alignment) are significantly associated with later attainment, net of controls (Model 3). Specifically, students with aligned high aspirations have the highest likelihood of attaining the Abitur and enrolling in tertiary education, followed by those with uncertain aspirations, misaligned aspirations, and finally, aligned low aspirations. As shown in section 5.1, immigrant-origin students are less likely to have aligned low aspirations and often more likely to have aligned high aspirations. Controlling for immigrant-native differences in aspirations significantly reduces migrant advantages in attainment (Model 3 versus Model 2), suggesting that aspirations mediate these gaps and have a beneficial impact on the attainment of immigrant-origin students.

### 5.3. The consequences of aspirations and moderation by migration background

Next, we investigate whether the impact of different aspiration combinations on educational attainment varies across national origin groups by fitting models with interactions. Results for Abitur attainment are presented in Figure 2. We find evidence that the outcomes of immigrant-origin students are generally more affected by their aspirations than the outcomes of native-origin students. This is driven by a greater *immigrant advantage* associated with more ambitious aspiration combinations (e.g. aligned high aspirations) rather than a greater *immigrant disadvantage* associated with less ambitious aspirations (e.g. aligned low aspirations). In fact, immigrant-native differences in attaining the Abitur are large among students who hold ambitious educational or occupational aspirations and smaller among those who hold aligned low or uncertain aspirations.



**Figure 2.** The association of teenage aspirations with Abitur attainment, by origin group.

Notes: Predicted probabilities with 95% confidence intervals obtained from logit models controlling for students' country of origin, gender, cognitive and language test grades, math and German school marks, school track in wave 1 of the survey, and parental educational and occupational attainment, and interacting their country of origin with their occupational and educational aspirations. For a definition of the teenage aspirations, consult the Data and Methods section of the paper. Source: Waves 1–8 of the CILS4EU German data, own calculations.

The figure shows that the likelihood of attaining the Abitur for native-origin students is not strongly associated with their aspirations. By contrast, most immigrant-origin groups benefit from being more ambitious, especially those with aligned high aspirations. This suggests that, during secondary education, ambitious educational and occupational aspirations may complement each other in driving immigrant-origin students toward success. This pattern is particularly evident for African-, Polish- and Turkish-origin students since their rate of Abitur attainment is much higher when they hold *aligned high* aspirations compared to when they hold *only* high occupational aspirations *or* high educational aspirations. However, the same is not true for Asian-origin students since they have a high and similar likelihood of attaining the Abitur when they have either ambitious educational or occupational aspirations (or both), suggesting that these two types of aspirations may also work as substitutes.

Figure A3 in the appendix shows that patterns are slightly different for tertiary enrollment. First, tertiary enrollment is influenced by teenage aspirations also for native-origin students (unlike their Abitur attainment). Second, the benefit of holding aligned high aspirations is less clear-cut. Perhaps not surprisingly, for several groups, holding high occupational aspirations seems to be strongly associated with tertiary enrollment, also when educational aspirations are low. However, estimates are not precisely estimated and should be interpreted cautiously.

## 6. Discussion

The ambitious educational aspirations of minority students and their consequences have been controversially discussed in the literature. Little is known about the link between their educational and occupational aspirations, although it could inform us about the benefits of their ambitious goals. This article has investigated immigrant-native gaps in the level, alignment, and certainty of teenage occupational and educational aspirations, as well as their association with subsequent upper secondary attainment and tertiary enrollment.

In our first set of analyses, we find that students with a background from Asia, FSU countries, and Turkey are more likely to hold ambitious teenage occupational aspirations compared to German-origin students. Among these, Asian-origin and Turkish-origin are especially likely to also hold aligned high educational aspirations, together with students of Southern European origins. In contrast with some of our hypotheses, we do not find evidence that immigrant-origin students are more likely to hold misaligned aspirations compared to German-origin students (except for Asian-origin students). We find that some migrant groups are more likely to hold uncertain aspirations, albeit not first-generation students, as we had predicted. Almost all immigrant-origin groups are *less likely to hold aligned low* occupational and educational aspirations compared to German-origin students.

In our second set of analyses, we show that these immigrant-native gaps in teenage aspirations mediate a significant part of the upper secondary attainment and tertiary enrollment advantage of second-generation students, especially those of Turkish descent. We find that students with aligned high aspirations are the most likely to have a higher educational attainment, followed by those with uncertain, misaligned, and aligned low aspirations. The fact that immigrant-origin students are least likely to

be in the last group, and often very likely to be in the first, explains part of their higher attainment. In our moderation analyses, we also show that most immigrant-origin students benefit more from having high educational and/or occupational aspirations, especially in terms of upper secondary attainment. For some groups, holding aligned high aspirations is especially favorable, while for others, having *either* high occupational *or* high educational aspirations is indifferent.

Our findings have some implications for the debate on the consequences of the ambition of immigrant-origin students (Dollmann and Weißmann 2020; Tjaden and Hunkler 2017). According to the literature, holding aligned high teenage aspirations (as opposed to misaligned, uncertain, or aligned low aspirations) is beneficial for students' subsequent educational *and occupational outcomes* (Schmitt and Faas 2016; Staff et al. 2010; Yates et al. 2011). Since we find that most immigrant-origin students are less likely to have aligned low aspirations compared to German-origin students, we interpret this as a positive signal for their future attainment. This is especially true for students with an Asian, Southern European and Turkish background, who are more likely to hold aligned high aspirations. Although respondents were too young to observe their occupational attainment, our findings confirm that having aligned high aspirations (or at least not aligned low aspirations) improved the upper secondary attainment and tertiary enrollment of immigrant-origin students. In fact, our results show that ambitious aspirations were more beneficial for immigrant-origin students than native-origin students. Taken together, our results contribute to the literature suggesting that immigrant ambition has a net beneficial effect on the attainment of immigrant-origin students (Dollmann et al. 2023; Ferrara 2022).

Our results align with existing literature showing a positive link between educational outcomes and holding high and aligned adolescent aspirations. Unlike prior US- and UK-based studies, our research shows that these effects are also found also in more stratified educational systems like the German one (even when controlling for students' track placement). We also find that the impact of aspirations varies significantly across migration backgrounds. This could reflect the fact that aspirations could have different meanings for different groups of students. For some groups, like native-origin students, aspirations could be appraisals of their objective opportunities that are not then acted upon (Dochow and Neumeyer 2021). If, instead, aspirations are driven by immigrant optimism and a strong desire for upward mobility instilled by migrant parents (Salikutluk 2016), then they may trigger more behavioral responses. Prior research from the UK and the USA has not addressed migrant inequalities specifically, but we can hypothesize that our findings on immigrant-native gaps should also extend to those contexts (along with others). However, future research is needed to confirm the external validity of our results.

Our work also contributes to the literature on the causes of the immigrant aspiration paradox. In line with prior research, our findings suggest that immigrant optimism is a strong determinant of the immigrant advantage in educational (and occupational) aspirations, while we find mixed support for the theories of blocked opportunities and lack of information (Fernández-Reino 2016; Salikutluk 2016). Although we do not provide strict tests of the three theories, we reach similar conclusions to prior studies on the topic through a different analytical approach. Another related and important finding of our paper is that we find an immigrant paradox in upper secondary attainment and tertiary enrollment, which is not fully explained by our measures of teenage

aspirations. This leaves some open questions about the immigrant paradox and the ability of existing theories to explain it. Future research should develop better theories and stronger tests for them through better designs and better proxies.

A key limitation of our study is that we could not follow individuals beyond the age of 25. This implies that we could not measure their final educational attainment and occupational outcomes. The role of aspirations on the latter may be hampered by other factors, such as discrimination in the labor market, which we could not address in this study. Moreover, several individuals could not be followed beyond the age of 20, so we could not determine their tertiary enrollment, and they had to be treated as missing. Another set of limitations has to do with our aspiration variables. First, we could not fully isolate the level and certainty of aspirations from each other since they are captured with a single survey question. Second, our measures of aspirations were somewhat coarse because of data limitations. We addressed this by trying different specifications of our outcome variables, and the results did not change substantively. Future research should attempt to replicate our design using richer measures of occupational and educational aspirations.

The increasing popularity of university education and the growing complexity of the labor market have raised concerns about inflated aspirations and ‘directionless’ youth (Schneider and Stevenson 1999). Some of these concerns have extended to immigrant-origin youth, who are especially motivated but might not have the means to achieve some of their aspirations. Recent research, including this paper, supports the view that ambitious aspirations are an important resource for the children of immigrants, which pays off at least in terms of upper secondary attainment. Future research should move further in the life course and examine the final attainment of the children of immigrants as well as their occupational and social outcomes.

## Notes

1. For the sake of conciseness, we use ‘immigrant-native gaps’ to refer to differences between students with and without an immigrant background.
2. The CILS survey includes initial student weights but does not provide longitudinal weights. Since our first set of analyses is based on outcome measures in wave 2, we constructed a set of weights to account for attrition after the first wave. For our second set of analyses, we built weights correcting for the probability of having non-missing information on, respectively, upper secondary attainment and tertiary enrollment. Weights were generated using models including students’ gender, migrant generation, parental educational and occupational attainment, and their scores in cognitive and language tests.
3. All analyses were also run using logistic models, and the results were similar. We opted for linear probability models to facilitate the comparison of coefficients across models and groups (Mood 2010).

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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