frontiers | Frontiers in Education

TYPE Original Research
PUBLISHED 04 September 2024
DOI 10.3389/feduc.2024.1431289

OPEN ACCESS

EDITED BY
Natalia Salas Guzmán,
Finis Terrae University, Chile

REVIEWED BY
Francisca Beroíza-Valenzuela,
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Yamina El Kirat El Allame,
Mohammed V University in Rabat, Morocco

*CORRESPONDENCE
Shauny Seynhaeve
✉ shauny.seynhaeve@ugent.be

RECEIVED 16 May 2024
ACCEPTED 20 August 2024
PUBLISHED 04 September 2024

CITATION
Seynhaeve S, Vanbuel M, Kavadias D and Deygers B (2024) Equitable education for migrant students? Investigating the educational success of newly arrived migrants in Flanders. *Front. Educ.* 9:1431289. doi: 10.3389/feduc.2024.1431289

Equitable education for migrant students? Investigating the educational success of newly arrived migrants in Flanders

Shauny Seynhaeve[1]*, Marieke Vanbuel[1], Dimokritos Kavadias[2] and Bart Deygers[1]

[1]Department of Translation, Interpreting and Communication, Ghent University, Ghent, Belgium, [2]Department of Political Sciences, Free University of Brussels, Brussels, Belgium

Introduction: Previous research has uncovered various inequalities for immigrant students in education systems worldwide. Yet, the degree to which diverse background factors, such as socio-economic status and prior educational trajectory, contribute to these educational disadvantages remains uncertain.

Methods: Using data from the Flemish administrative database (2009–2019) on 48,340 mainstream students and 1,022 Newly Arrived Migrant Students (NAMS) across 685 schools, this study examines NAMS' passing and dropout rates in Flemish secondary education in comparison to the outcomes of their peers without a recent migration background. Data included demographic background variables, school variables, and indicators of educational outcomes.

Results: A cross-classified multilevel regression analysis showed that, after controlling for background variables, NAMS still show higher probabilities of failing a year and of dropping out. Moreover, the impact of SES is stronger for native students than for NAMS.

Discussion: These results suggest the existence of a migrant background effect disadvantaging NAMS in Flemish secondary education.

KEYWORDS

newly arrived adolescents, migrant students, equity, passing, dropout, SES

1 Introduction

In the field of educational effectiveness, education systems have traditionally been evaluated in terms of their quality, measured through student outcomes (Reynolds et al., 2014). However, in recent years, the focus has shifted to include the equity dimension of education, in which effective education systems are defined as systems that provide equal opportunities for all students (Nachbauer and Kyriakides, 2020). Typically, equity is described as a multidimensional construct, consisting of two aspects: inclusion and fairness (Kyriakides et al., 2018). On the one hand, equity as inclusion refers to an equal minimum of basic educational opportunities for all students. On the other hand, equity as fairness is reached when there is an even distribution of achievement among all students, regardless of background characteristics. In sum, in the equity paradigm, "students' learning outcomes should depend only on their own efforts and capacity, and not on considerations over which they have no influence (i.e., gender, ethnic origin, and family socio-economic level)" (Nachbauer and Kyriakides, 2020, p. 4). Against this

backdrop, we view an effective education system as one in which the association between student outcomes and background factors, such as SES, migrant background or gender, is minimized.

Both the fairness and inclusion dimension of equity have been touched upon in research on the school careers of students with migration backgrounds, revealing lower academic performance among migrant students (Suárez-Orozco et al., 2010). Yet, research into the educational outcomes of various migrant student populations suggests that it is essential to recognize newly-arrived migrant students (NAMS) as a distinct subgroup among migrant students. NAMS are first-generation immigrants who arrive in their host country between the ages of 12 and 18. Hood (2003) claims that recent migrant students have a 3-fold "formidable barrier" (p. 2) to overcome in the course of their educational careers. In the first place, due to their recent arrival in their host country, NAMS are still in the early stages of the language acquisition process, which takes many years of considerable effort and motivation (Esser, 2006). Secondly, NAMS must adjust to their new host country, which involves encountering a variety of cultural and social challenges (Suárez-Orozco et al., 2008; Devos et al., 2024). Lastly, NAMS are expected to navigate through an entirely new education system (Emery et al., 2020); one that is frequently not attuned to their specific needs (Suárez-Orozco et al., 2010).

An increasing number of empirical studies seem to confirm these assumptions. Namely, migrant students with a higher age of arrival often attain lower education levels in the long term, in comparison to second-generation migrant students or migrant students who arrived at a younger age (Hermansen, 2017; Ansala et al., 2019). According to Basu (2018), the critical age for this effect is 8 years old. In addition, studies consistently indicate that NAMS are more prone to following uneven educational trajectories than the student population without a migration background. For instance, NAMS are overrepresented in the vocational track of Flemish secondary education and are more likely to repeat a year (AGODI, 2016), which assumably impacts the further academic careers of these students. Moreover, they are more prone to leaving secondary school without a degree, causing them to end up with a weaker starting position in the labor market (Van Avermaet et al., 2017).

Although various reports have addressed these bottlenecks in the educational trajectories of recent migrant students in a Flemish context (AGODI, 2016; Van Avermaet et al., 2017), they cannot adequately explain whether (and if so, to what extent) being a NAMS has an additional negative effect on their educational outcomes, on top of other background factors and compared to different profiles of students within the heterogenous mainstream population. Namely, while NAMS are usually compared to mainstream native student populations, both NAMS and mainstream student populations shows large diversities characterized by personal background factors that should be accounted for.

From the perspective of equity as fairness, this paper examines the educational success of NAMS in Flemish secondary schools in comparison to the mainstream student population. More specifically, we investigate the impact of various individual background factors, including being a NAMS, on the passing and dropout rates of 45,731 students across 670 Flemish schools. This study enhances our understanding of the educational trajectories of migrant students by examining the association between recent migrant background and educational success.

2 Literature review

The educational outcomes of migrant students have been a focal point of academic research (e.g., Salikutluk, 2016; Hermansen, 2017) due to persistent achievement gaps between these students and their non-migrant peers. In the following literature review, an overview of migrant students' educational outcomes, highlighting trends and disparities is presented. This is followed by an exploration of the multifaceted factors contributing to the achievement gap, including socio-economic status and language barriers. Finally, the review examines how these background factors differentially affect various subgroups of students, offering deeper insights into migrant students' educational outcomes.

2.1 Migrant students' educational outcomes

In research on migrant students in education, migrant students can typically be categorized into subgroups according to their generational status (Pivovarova and Powers, 2019). Namely, the term second-generation immigrants is used to describe children of immigrant parents (Dixon and Wu, 2014), while children who have migrated themselves are typically referred to as 1.5-generation immigrants (Dolberg and Amit, 2023). NAMS form an additional subgroup, being 1.5-generation immigrants who arrive in their host country during adolescence (i.e. between the ages of 12 and 18; Rumbaut, 2004). Although migrant students are a heterogenous group exhibiting diversity in terms of their generational status and age of arrival, research often treats them as a single collective group. In the subsequent discussion of the literature, we will use the term "migrant students" in reports of studies that do not distinguish between subgroups of migrant students according to their generational status. If such categorization did occur, we will opt for the more precise term.

Migrant students are often found to hold high educational expectations. For instance, in a study of 2,205 native German and immigrant students, Salikutluk (2016) found an aspiration imbalance, with migrant students having the highest educational expectations. Yet, despite their ambitious goals, studies have confirmed that migrant students tend to achieve lower scores on standardized tests (e.g., Suárez-Orozco et al., 2010, with a focus on NAMS) and have a higher probability of being placed in less academically oriented tracks (Lüdemann and Schwerdt, 2013). An example is the study by Schnepf (2007), in which the results of multiple international low stakes tests are used to investigate achievement differences between immigrants and native students. The study concluded that internationally, migrant students receive lower scores on maths, science and reading tests compared to their native peers. Similarly, Ammermueller (2007) found a gap in reading scores between immigrant and non-immigrant students the equivalent of about 1 year of schooling.

As they reach the end of their school careers, students with a migration background are faced with additional disadvantages. For instance, migrant students attain lower education levels at the end of secondary education (Hustinx and Meijnen, 2001). Moreover, students with a migration background appear to be at a disadvantage concerning dropout rates (Bembich, 2023). Students are considered dropouts when they leave school without qualification, or with a reduced qualification (such as special education or lower secondary education; Lamote et al., 2014). Although migrant students do not appear to have a higher intention to drop out than their peers (Hippe and Jakubowski, 2018), a study in Flanders showed that migrant students are in fact more than twice as likely to leave secondary school without a qualification (Duquet et al., 2006). These above-average dropout rates may potentially have detrimental long-term consequences for early school leavers, as dropout is associated with later unemployment (European Commission, 2017), lower income (De Witte and Rogge, 2013) and even poorer health and more risk of criminal behavior (Fall and Roberts, 2012). For migrant students in particular, high dropout rates and the long-term effects of dropout seem to be in line with the "failing economic assimilation" of migrants observed in Western Europe (Lüdemann and Schwerdt, 2013, p. 457).

2.2 Factors explaining migrant students' achievement gap

A tradition of research has investigated educational disadvantages faced by migrant students, with a particular emphasis on exploring the underlying causes of the disparities in academic attainment discussed above. In what follows, we examine how migrant students' educational outcomes may be impacted by factors related to personal background factors like language and socioeconomic status, as well as educational background factors, such as ability tracking and grade retention.

Much research (e.g., Agirdag and Vanlaar, 2018; Cummins, 2008) has highlighted the potential role of language as a contributing factor to the educational outcomes of migrant students. Namely, speaking a language at home that is not the language of instruction is associated with lower reading performance (Esser, 2006), lower science achievement (Van Laere et al., 2014), and higher dropout rates (Duquet et al., 2006). Different hypotheses have been proposed to explain the negative effect of speaking a minority home language. Firstly, according to the integration hypothesis, home language use indicates a family's level of integration (Duquet et al., 2006). Thus, speaking a different home language would indicate a clash between students' home cultures and their school cultures, leading to poorer educational outcomes. Secondly, the exposure hypothesis states that students who speak a different language at home are insufficiently exposed to the language of instruction, leading to a weakened proficiency in the school language (Dixon and Wu, 2014). Because of the strong association between linguistic competence and school performance (Esser, 2006), having a different home language leads to lower educational outcomes. However, other scholars believe that these hypotheses lead to a deficit view on language, in which the language of instruction competes against the home language (Agirdag and Vanlaar, 2018). More specifically, in contrary to the hypotheses stated above, Cummins (2008, p. 496) claims that "there is no empirical justification for constructing immigrant students' home language as a cause of underachievement." For instance, research by Agirdag and Vanlaar (2018) acknowledges the achievement gap between students who do and do not use the language of instruction at home, but indicates that frequent use of the minority language with parents does not explain this gap. Thus, Agirdag and Vanlaar (2018, p. 134) conclude that "language use *per se* does not trigger underachievement." Therefore, it is crucial to consider additional factors beyond language to explain migrant students' educational outcomes.

Various studies (Hustinx and Meijnen, 2001; Duquet et al., 2006) note an association between the educational underachievement of migrant students and socio-economic status (SES), as a significant portion of these migrant students come from less fortunate family backgrounds. According to a definition by Sirin (2005, p. 418), SES "describes an individual's or a family's ranking on a hierarchy according to access to or control over some combination of valued commodities such as wealth, power, and social status." Research has confirmed the connection between SES components and educational achievements. For instance, low levels of maternal education are linked with lower test scores across subjects (Early et al., 2020). Moreover, low maternal education significantly predicts higher dropout rates (Yi et al., 2015). Similar results have been found regarding parental occupational prestige as a component of SES: across PISA cycles between 2000 and 2012, parental occupation was positively associated with higher test scores for maths and science in the UK (Early et al., 2020).

Regarding their education background, migrant students often face erratic educational trajectories, particularly evident in practices like ability tracking. Tracking refers to "the ability-grouping of students into different educational programs called tracks" (Dockx et al., 2019, p. 828). Lüdemann and Schwerdt (2013) investigated German primary school students' reading and maths performance along with their track allocation at the start 670 of secondary education. It was concluded that migrant students experience a double educational disadvantage: not only do they show lower test performance in reading and maths than their non-migrant peers, they are also more frequently allocated to lower tracks after controlling for test achievement. Notably, being allocated to a lower track may cause additional disadvantages, as vocational tracks tend to result in lower outcomes and learning gains compared to more academic tracks (Lavrijsen and Nicaise, 2015; Dockx et al., 2019).

A similar disadvantage exists among migrant students regarding grade retention. When students retain a grade, they are held back from promoting to the next grade due to not meeting the necessary criteria, under the assumption that repetition will positively impact repeaters' academic achievement (Goos et al., 2021). Numerous studies have established that grade retention is more common among immigrant students and students from other disadvantaged backgrounds (e.g., Warren et al., 2014). Nevertheless, in contrast to the objective of grade retention, empirical evidence suggests that students are more likely to underperform across subjects, including languages (Chen et al., 2010) and science (Van Laere et al., 2014), after retaining a grade.

In the Flemish context, attempts have been made to map the educational trajectories of NAMS specifically through the publication of a large research report in 2017 (Van Avermaet et al., 2017). Using administrative data from 2008 to 2009 until 2013 to 2014, descriptive analyses showed that NAMS are less likely to pass their year and more likely to leave secondary school without a degree. Multilevel regression analysis was conducted to get a deeper understanding of NAMS' passing rates in the 1st year after reception education in the school year of 2012–2013. The report found that NAMS' passing rates were significantly associated to their mother's education level, with low maternal education levels indicating lower passing rates. Moreover, the highest passing rates for NAMS were found in the vocational track of Flemish secondary education. While this report presents valuable insights into NAMS' educational outcomes and trajectories, certain limitations within its scope and methodology should be acknowledged. Firstly, the report does not compare NAMS' outcomes with those of the mainstream student population, which undermines a comprehensive understanding of equity within the Flemish educational landscape. Secondly, while the report identifies factors that influence NAMS' outcomes similar to those identified in research on native or less recent migrant students, the absence of interaction effects means that the report does not explore the extent to which these factors may impact various student groups differently. Thirdly, due to its narrow focus on the 1st year after reception education, the report cannot determine whether the observed effects only apply to this transition year, or whether they persist throughout NAMS' educational trajectories.

2.3 Exploring differential effects of background factors across student subgroups

Although there appears to be a consensus on which factors impact student outcomes, various studies (e.g., Salikutluk, 2016; Strand, 2010, 2014a) report differing effect sizes across different student groups. Firstly, SES is believed to have differential effects on migrant students in comparison to mainstream students. For instance, when measuring the effect of parental education on school performance, Salikutluk (2016) found that the effect is larger for native German students than for Turkish immigrant students. Similarly, Strand (2010, 2014a) concluded that economic disadvantage is a more robust predictor for low achievement in ethnic majority students than in students of other ethnicities. Additional results have been established regarding the impact of gender on students' outcomes: while gender gaps exist across all student subgroups, with girls generally outperforming boys (Strand, 2014a), the gender gap is suggested to be smaller for majority background students than students of minority backgrounds (Kingdon and Cassen, 2010). Regarding background factors related to students' educational trajectories, research looking into potentially differential effects is scarce. For instance, while various studies suggest that early ability-tracking disproportionately impacts lower SES (Esser, 2006) or lower achieving (Lavrijsen and Nicaise, 2015) students, there is a lack of research on the varying effects of different tracks within a single tracking system.

In sum, these studies suggest that the effects of students' background factors on their educational outcomes have an interactive nature rather than being solely additive (Dekkers et al., 2000). As such, student-level factors should not be considered as uniformly affecting all student groups. Instead, Kyriakides et al. (2018, p. 29) claims that "there is a need to look into the impact of interactions between SES and other students background factors." Thus, while prior research helps to explain the achievement gap between students with and without a migration background, a lot of work remains to be done before the exact mechanics will be understood.

2.4 Research questions

It has been established that various educational systems yield inequitable outcomes for migrant students in terms of achievement and dropout rates. These educational inequalities are likely to be even more pronounced within the vulnerable student population of NAMS. However, it remains unclear whether the aforementioned educational disadvantages are a direct result of migrant students' (recent) migrant background, or whether various background factors, such as language, SES and prior educational trajectory, account for the differential outcomes. Moreover, there seems to be a lack of studies delving into the interaction between migrant background and additional background factors (Strand, 2014a; Kyriakides et al., 2018).

This study was guided by three research questions:

(1) To what extent do NAMS' educational outcomes, measured by passing and dropout rates, diverge from those of mainstream students with varying language backgrounds?
(2) After accounting for personal background and educational trajectory factors, what influence does being a NAMS have on students' educational outcomes?
(3) What is the differential impact of personal background and educational trajectory factors on the educational outcomes of NAMS in comparison to those of mainstream students with varying language backgrounds?

If the goal is to establish a more equitable education system that caters to every student, including those with a migrant background, it is crucial to gain insight into the achievement gaps of this student population.

2.5 Research context

As the Flemish secondary education system follows an early tracking approach, wherein students are grouped by ability levels as young as 12 years old (Dockx et al., 2019), NAMS who enter secondary school end up in a specific track (Emery et al., 2021). Depending on their age and skills, NAMS are either (1) enrolled in the first stage of secondary education, which consists of one common secondary education track, or (2) in the second or third stage, choosing between four tracks (cf. Figure 1). The

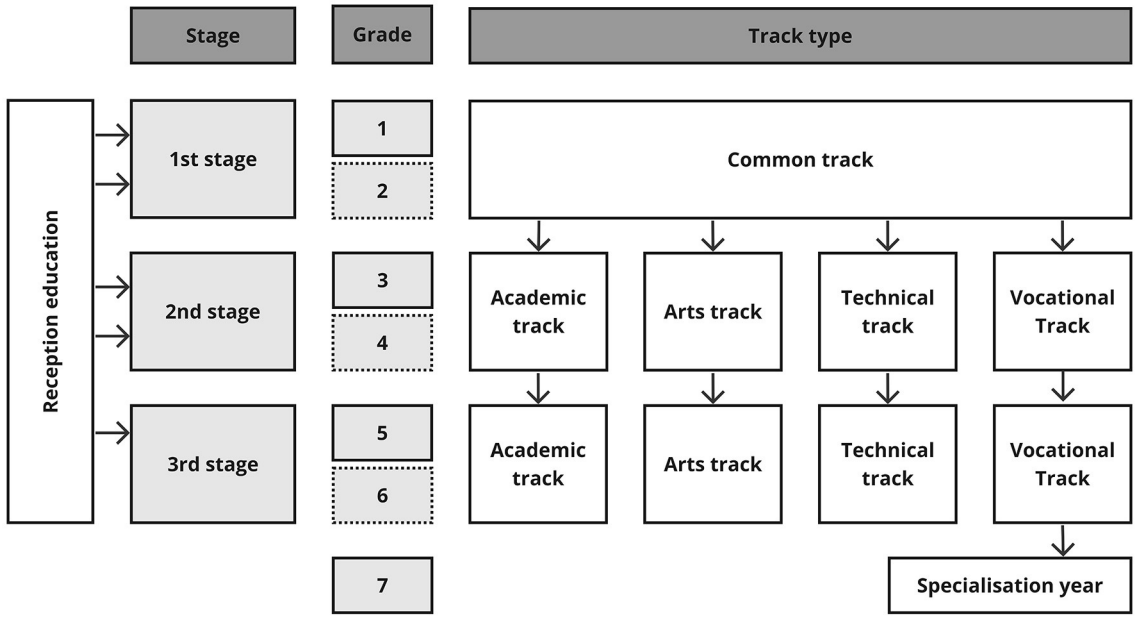

FIGURE 1
Schematic presentation of Flemish secondary education structure.

academic prepares students for enrolment in higher education. The vocational track, often perceived as the least prestigious, directs students toward the labor market by emphasizing vocational skills. The remaining tracks are the arts track, which integrates arts education alongside general education, and the technical track, in which students are prepped for both the labor market and tertiary education. Flemish secondary education is compulsory until the age of 18. Students who have not yet received a qualification by this age, can decide to either stay on, or drop-out early.

Although their age is taken into account, it is important to note that NAMS are often allocated to younger grade levels, resulting in a majority of NAMS being 1–2 years overage for grade upon their enrolment in regular secondary education (Van Avermaet et al., 2017).

Within the tracks of Flemish regular secondary education, no high-stakes standardized exams are organized to date (Dockx, 2019). Instead, in each school, a teacher council decides over students' certificate at the end of each school year. When students receive an A-certificate, it means they have fully passed and they can move on to the next year. C-certificates are given out to students who failed the year and who have to repeat the year. Finally, in between the A- and C-certificate, the B-certificate indicates that students either have to repeat their year if they want to stay in the same field of study, or else they have to choose a different field of study. As such, a B-certificate does not imply a pass. At the end of regular secondary education, students who have passed the final year receive a qualification.

3 Materials and methods

The following section outlines the design, sample, measures, and analytical methods employed in this study. Using a longitudinal observational approach, this study employs multilevel logistic regression to analyse hierarchical data on the educational outcomes of secondary school students.

3.1 Design

This study is primarily interested in the effects of being a NAMS specifically, together with the effects of SES and other background variables, on secondary school students' educational outcomes. These outcomes are measured by means of two binary parameters: passing (A-certificate vs. B-/C-certificate) and dropout.

The data are hierarchical. For passing, student data are analyzed for each school year they are enrolled in the Flemish secondary education system. As such, there are multiple certificates nested in each student; one for each year of enrolment. Moreover, because certification in secondary education is decided on by the school's teacher council (Talloen et al., 2020b), it is important to nest students within pedagogical units.[1] However, because students can be members of different schools throughout their educational career, years in school are nested within combinations of students and pedagogical units. For dropout, we only consider the final year in which students are enrolled in secondary education. As such, for this outcome variable, students are nested within the pedagogical unit they spend their final year of school in.

1 Throughout this study, we use the term "pedagogical units" which refers to one or more schools with a common administrative policy, a common pedagogical and didactic organization and a profile to the outside world as one school (Talloen et al., 2020a).

3.2 Sample

The present study utilizes administrative, population-based sampling. The dataset used for this study consists of administrative data that were received from the Flemish Department of Education after a non-disclosure agreement had been signed. The dataset included information about Newly Arrived Migrant Students and mainstream secondary school students. These mainstream students include second and third generation migrants, and first generation migrants who migrated before the age of 12 years old. All participant data are registered from their first entry in secondary education. For NAMS, this means that data were collected starting from the first registration in reception education, while mainstream students were followed from first enrolment in regular secondary education. All students belonged to one of two cohorts: one consisting of students starting their secondary education in 2009–2010, and another with students who were first enrolled in secondary education in 2013–2014.

Because this dataset of population data serves only administrative purposes, adjustments had to be made in order to facilitate its analytical use. One important adjustment was the time span in which information about students was included. While a typical secondary educational trajectory spans 6 years (or 7 years in case of enrolment in the 7th grade), the duration can vary due to various factors. For instance, depending on their age, NAMS are placed into a specific grade of secondary education after completing reception education, potentially shortening or lengthening their educational trajectory beyond the standard 6 years. Additionally, while dropout can lead to shorter trajectories, extended trajectories may be the result of grade retention. As such, the dataset included information on some students up to 12 years after initial enrolment in secondary education. For analytical purposes, we restricted our analysis to a specific timeframe. Specifically, we included information about students' secondary school careers until the end of their educational career in regular secondary education (i.e., drop-out or graduation), or until the 8th consecutive school year in case students did not yet finish their secondary school education in that time.

Secondly, the original dataset included information about students across all tracks of secondary education, but some were omitted for various reasons:

- The arts track was omitted from further analysis due to the limited number of students following this specific track ($N =$ 4,695 enrolments across the entire dataset).
- When they have turned 16 or after having completed the first stage of secondary education at the age of 15, students in the vocational track have the additional possibility to enroll in a part time variant of the vocational track, in which regular schooling is combined with workplace learning. Due to the different evaluation system in this part time track, it was not included in the analysis ($N = 3{,}881$ enrolments).
- Due to the absence of certification, tracks that do not fall under regular compulsory secondary education, such as special education and post-secondary tracks, were omitted from further analysis ($N = 1{,}384$ enrolments in special education, $N = 203$ in post-secondary tracks).

The remaining dataset contained information about students' gender, SES, educational track, and potential grade retention. In total, the dataset consisted of 274,203 years of enrolment nested within 45,731 students and 670 pedagogical units. This makes an average of 6 years of enrolment per student.

3.3 Measures

In what follows, the dependent and independent variables that were added to the multilevel logistic regression models are specified and determined.

3.3.1 Dependent variables

This study considered two dependent variables. Firstly, participants' certification at the end of each school year was recoded to a dependent, binary variable: either participants passed (=A-certificate or qualification) or did not pass (=B- or C-certificate, or no certificate applicable) their year. Secondly, another dependent variable indicated whether students dropped out without receiving a qualification at the end of their secondary school career. In line with the Flemish Department of Education's definition of early school leavers or "dropouts" (Departement Onderwijs en Vorming, 2021), each student who was registered in secondary education in year X but no longer registered in year X+1 without having completed their qualification was coded 1. It is important to note that this also includes students who left the Flemish schooling system due to migrating to another country. Students who successfully completed their studies and obtained a degree were coded 0.

3.3.2 Independent variables at the student level

Three student characteristics were added to the model as control variables: language profile, SES and gender. Firstly, the variable language profile differentiated NAMS from mainstream students. Within the category of mainstream students, a distinction was made based on students' home language. The Flemish Government categorizes students' home language use as "other" when they do not communicate in Dutch with any family members, or, in case of siblings, when Dutch is only spoken in communication with siblings or one parent. As such, while the category of mainstream students does not distinguish between students without a migration background, second and third generation migrants, or first-generation migrants who migrated before the age of 12 years old, speaking a different home language than Dutch likely indicates a migration background in some capacity. Moreover, PISA reports have repeatedly found a lower performance among students who do not speak the language of instruction at home (OECD, 2019). The language profile variable thus consists of three categories: home language Dutch, home language other and NAMS. Secondly, SES was included as a binary factor, based on maternal education level. The administrative dataset we used for this study contained only information on the mother's education, neighborhood, and school allowance, but since the latter two are not always reliable indicators of SES in the

TABLE 1 Overview of student characteristics in 3rd year of enrolment.

	Language profile					
	Dutch (n = 39,468)		Other (n = 4,852)		NAMS (n = 701)	
	%	n	%	n	%	n
Boys	49.8	19,662	48.2	2,338	47.5	333
Common track	2.6	1,019	11.1	540	20.0	140
Academic track	55.8	22,019	48.3	2,343	13.1	92
Technical track	27.1	10,697	18.2	885	19.7	138
Vocational track	14.5	5,733	22.3	1,084	47.2	331
Overage for grade	15.8	6,234	45.9	2,226	95.7	671
Transition grade	3.2	39,442	13.0	631	50.2	352
Cohort 2013	50.4	39,468	60.9	2,956	59.2	415

context of newcomers (Van Avermaet et al., 2017), we only included the first SES component. In line with the Flemish government, we classified all students whose mother did not finish secondary education as low-SES student (Laurijssen and Glorieux, 2020). There is known to be a correlation between SES and achievement, with students from low SES backgrounds often showing lower educational outcomes (Sirin, 2005). Thirdly, gender was added as a binary control variable. Internationally, there has been a variety of evidence indicating that girls outperform boys in different areas of academic achievement (Spinath et al., 2014).

On top of student characteristics, two characteristics of students' educational trajectories, namely age for grade and educational track, also functioned as independent variables in our model. Students who are overage for grade are less likely to pass (Talloen et al., 2020b) and more prone to eventual unqualified dropout (Suárez-Orozco et al., 2010). We therefore included a dichotomous variable indicating whether or not participants are overage for grade. For track, we added a categorical variable to the model. Various studies have found that students' performances depend on the educational track they are allocated to. Students with lower track assignments often show lower educational achievement due to various factors, such as emotional school disengagement and lower teacher expectations (Dockx et al., 2020). Moreover, descriptive analyses of certification in Flanders have shown that more B- and C-certificates are given out in the technical and vocational tracks of secondary education (Groenez and Lamberts, 2017). Tracks are thus believed to be related to certification, and consequently to passing. Lastly, an additional variable "Cohort" was added to indicate to which cohort students belonged.

Table 1 provides a snapshot overview of student characteristics during the 3rd year of enrolment. This specific year was chosen because students have advanced in their educational journey, offering a clearer understanding of their track allocations.

TABLE 2 Comparison of model fit (passing).

Model	χ^2	df	p
Model 0 vs. 1	952.21	2	0.000
Model 1 vs. 2	7,281.00	8	0.000
Model 2 vs. 3	419.44	12	0.000

TABLE 3 Comparison of model fit (dropout).

Model	χ^2	df	p
Model 0 vs. 1	368.31	2	0.000
Model 1 vs. 2	4,581.70	6	0.000
Model 2 vs. 3	36.27	4	0.000

TABLE 4 Parameter estimates of the empty model (passing).

	Model 0: Empty model		
Fixed part	B	SE	Sign
Intercept	1.871	0.329	***
−2*loglikelihood	188,400.4		

***P < 0.001.

TABLE 5 Estimates of the random effects of the empty model (passing).

		Model 0: empty model		
Random part		Var	SD	% Var
Student	(Intercept)	0.400	0.632	21.25
School	(Intercept)	0.378	0.615	10.83
Year	(Intercept)	0.888	0.942	10.30

3.3.3 Independent variable at the year level

Finally, a last variable was introduced to distinguish between various grades in secondary education. In Flemish education, secondary schooling is divided in three stages, each consisting of 2 years (cf. Figure 1). We therefore distinguished between "transition grade," i.e., grades after which students transition from one stage into the next (being the 2nd, 4th, and 6th grade, indicated with a dotted line in Figure 1) and in which we expect the teacher council to hold a more rigorous assessment of students, and non-transition grades.

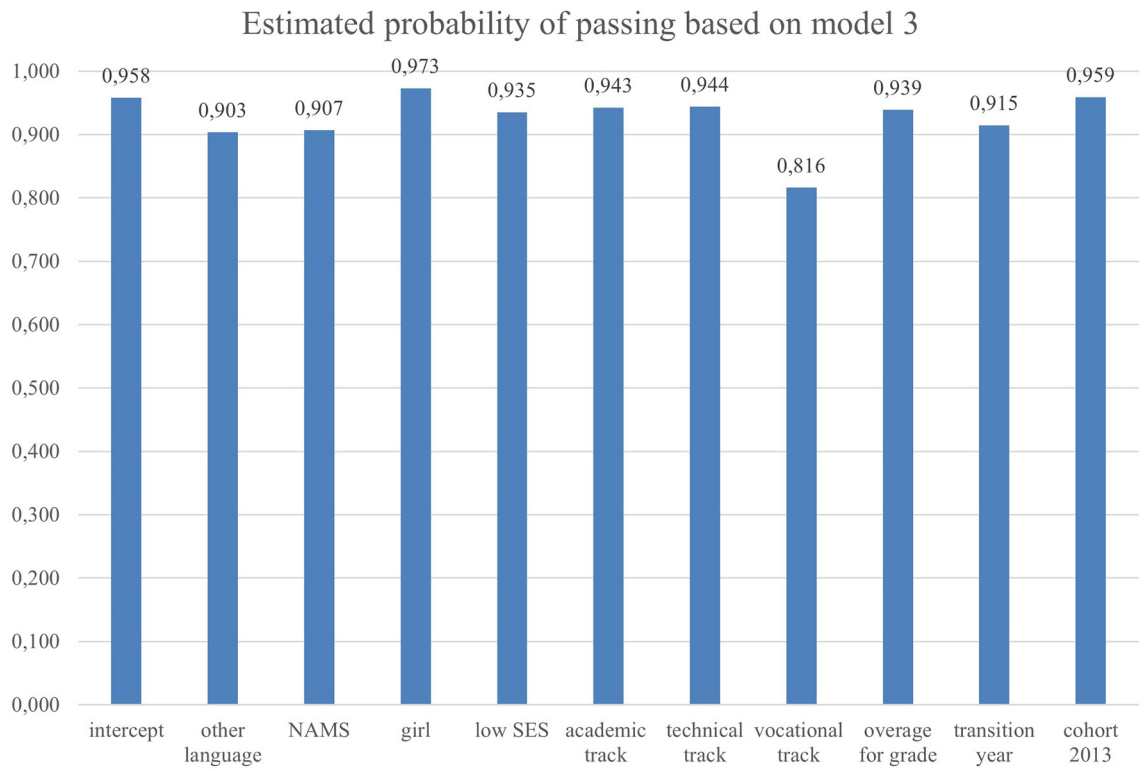

FIGURE 2
Estimated probability of passing based on model 3.

3.4 Analysis

In order to analyse the dataset, two univariate multilevel models were applied using R software (R Core Team, 2021) with the package lme4 (Bates et al., 2015). For each outcome variable (i.e., passing and drop-out), we calculated a different set of models.

For the passing model, we distinguished three cross-classified levels: years of enrolment within combinations of students and pedagogical units. The model was built in a stepwise matter. Initially, we built a null model (model 0) without any predictor variables. This model gave us insights in the extent to which passing differs between students within and across schools. Next, we added the variable indicating students' language profile, which made up model 1. That way, we were able to investigate the impact of students' language background on passing within and across schools without controlling for any other variables. Then, predictor variables (i.e., variables related to gender, SES and educational trajectories) were added to the model, which created model 2. Eventually, model 3 consisted of interactions between the independent variables and the language profile variable. This way, we were able to investigate the possible differential impact of being a NAMS on the effects of certain predictor variables. Table 2 shows the model fit for passing.

For dropout, two hierarchical levels were identified: students within pedagogical units. We again built the model using a stepwise approach. First, we constructed a null model without any predictor variables (model 0.1) to understand dropout variation within and across schools. In a following step, we added students' language profiles, forming model 1. This enabled us to explore the impact of students' language background on dropout. Then, predictor variables related to gender, SES and educational trajectories were included in the model, yielding model 2. Finally, model 3 introduced interactions between the independent variables and the language profile variable, allowing us to investigate a potentially differential impact of various language profiles on the effects of certain predictor variables. Table 3 shows the model fit for dropout.

4 Results

In the following section, the findings of the logistic multilevel analyses are presented. Section 4.1 discusses the results for the passing models, while Section 4.2 delves into the dropout models.

4.1 Passing

The empty model (cf. Tables 4, 5) shows that 21.25% of the variance in passing is situated at the year level, 10.83% at the student level, and 10.30% at the pedagogical unit level. Given the significant amount of variance at each level, we proceeded with a three-level logistic regression model. The odds ratio (*OR*) for the passing rate in this model is 6.49.

The first model includes students' language profile, with Dutch-speaking students as the reference category. This model shows that students' probability of passing their year are dependent on

TABLE 6 Parameter estimates for the fixed effects of passing model.

	Model 1: language profile			Model 2: predictor variables			Model 3: differential effects		
Fixed part	*B*	*SE*	*Sign*	*B*	*SE*	*Sign*	*B*	*SE*	*Sign*
Intercept	1.971	0.322	***	3.026	0.146	***	3.114	0.149	***
Language profile (ref = Dutch)									
other language	−0.639	0.022	***	−0.429	0.022	***	−0.878	0.044	***
NAMS	−0.830	0.054	***	−0.372	0.056	***	−0.838	0.165	***
Gender (ref = male)				0.449	0.015	***	0.472	0.016	***
SES (ref = low)				−0.387	0.017	***	−0.445	0.020	***
Track (ref = common)									
Academic				−0.266	0.050	***	−0.316	0.052	***
Technical				−0.221	0.050	***	−0.290	0.052	***
Vocational				−1.448	0.050	***	−1.624	0.052	***
Overage for grade				−0.389	0.017	***	−0.381	0.017	***
Transition grade				−0.690	0.023	***	−0.742	0.024	***
Cohort (ref = 2009)				−0.039	0.014	**	0.041	0.014	**
LP other x female							−0.107	0.038	**
LP NAMS x female							−0.234	0.105	*
LP other x low SES							0.265	0.040	***
LP NAMS x low SES							0.333	0.107	**
LP other x academic track							0.090	0.045	*
LP NAMS x academic track							0.205	0.191	
LP other x technical track							0.165	0.051	**
LP NAMS x technical track							0.272	0.170	
LP other x vocational track							0.770	0.050	***
LP NAMS x vocational track							0.691	0.146	***
LP other x transition grade							0.271	0.034	***
LP NAMS x transition grade							0.019	0.098	

*p < 0.05.
**p < 0.01.
***p < 0.001.

TABLE 7 Parameter estimates for the random effects of passing model.

	Model 1: language profile			Model 2: predictor variables			Model 3: differential effects		
Random part	*Var*	*SD*	*% Var*	*Var*	*SD*	*% Var*	*Var*	*SD*	*% Var*
Student	0.393	0.627	10.67	0.283	0.532	7.93	0.274	0.524	7.69
School	0.300	0.548	8.36	0.179	0.423	5.16	0.172	0.415	4.95
Year	0.919	0.959	21.84	0.141	0.375	4.11	0.144	0.380	4.19

their language profile. While mainstream students with other home languages have lower passing rates than their Dutch-speaking peers ($OR = 0.528$), this effect is even stronger for NAMS ($OR = 0.436$, $p = 0.000$).

Next, additional predictor variables (gender, SES, track, age for grade, transition grade, and cohort) were added to the model (model 2), with the reference category consisting of 2009 cohort boys in a non-transition grade of the common track who fit the age for grade. This model indicates that girls have significantly higher chances of passing than boys ($OR = 1.567$). Moreover, having a low SES has a negative impact on passing ($OR = 0.679$). Additionally, the model indicates that most students pass in the common track, followed by the technical track ($OR = 0.802$), the academic track ($OR = 0.767$), and lastly the vocational track ($OR = 0.235$). Furthermore, being overage for grade has a negative impact on students' passing

rates (OR = 0.678). Similarly, students in a transitional grade face a stronger challenge when it comes to passing compared to their peers who are not (OR = 0.501). Lastly, the findings indicate a higher success rate among students belonging to the 2013 cohort in comparison to those from the 2009 cohort (OR = 1.040).

Importantly, the inclusion of the predictor variables in model 2 caused notable shifts in the language profile effects. In model 1, the lowest passing rates were found among NAMS. However, model 2 shows that after controlling for various background variables, mainstream students who speak a different home language have a slightly lower probability of passing (OR = 0.651) than NAMS (OR = 0.689), but this difference is not significant (p = 0.320).

Finally, differential effects for NAMS were checked for by adding interactions between the language profile variable and predictor variables in model 3. Four significant interactions were found and displayed a similar pattern. Namely, while being a boy, having a low SES, being in a transition grade and in the vocational track are associated with significantly lower passing rates among Dutch-speaking students, these effects are less strong among NAMS and mainstream students who speak another home language. The trend of NAMS and mainstream students with a different home language showing similar passing rates persists throughout this final model (p = 0.804).

To ease interpretation of the results above, Figure 2 displays the estimated probabilities of passing based on the third model. The reference group is a boy from the 2009 cohort who speaks Dutch at home, with a high SES, in the common track, who is not overage, and not in a transition grade. An overview of the parameter estimates of models 1, 2, and 3 can be found in Table 6 (random effects) and Table 7 (fixed effects).

4.2 Dropout

The empty model (cf. Tables 8, 9) shows that 26.45% of the variance in dropout is situated at the pedagogical unit level. In this empty model, the odds ratio for the dropout rate is 0.059.

The first model includes students' language profile as well as a random slope to account for differing effects of being a NAMS across different pedagogical units. Dutch-speaking mainstream students form the reference category. As was the case with passing, this model shows that the chances of students dropping out of school are significantly dependent on their language profile. Namely, both NAMS (OR = 3.627, p = 0.000) and mainstream students speaking another home language (OR = 2.612, p = 0.000) are more likely to drop out of school than students with Dutch-speaking backgrounds. Moreover, the difference between dropout rates among NAMS and mainstream students speaking another home language is significant, with NAMS showing the highest dropout rates (p = 0.000).

Model 2 was formed by predictor variables (gender, SES, track, age for grade, and cohort) being added to the model, with the reference category consisting of 2009 cohort high-SES boys in the academic track who fit the age for grade. Girls have significantly lower chances of dropping out than boys (OR = 0.695). Additionally, lower SES-students show higher dropout rates than their high-SES peers (OR = 1.200). Moreover, in comparison to the academic track, dropout is more common in the technical track (OR = 1.254), with the highest dropout rates found in the vocational track (OR = 3.582). Additionally, students who are overage for grade have a significantly larger probability of leaving school early (OR = 18.277). Lastly, the findings indicate a higher dropout rate among students belonging to the 2013 cohort in comparison to those from the 2009 cohort (OR = 1.145).

TABLE 8 Parameter estimates of the empty model (dropout).

	Model 0: empty model		
Fixed part	*B*	*SE*	*Sign*
Intercept	−2.772	0.53	***
−2*loglikelihood	20,492.0		

***p < 0.001.

TABLE 9 Estimates of the random effects of the empty model (dropout).

	Model 0: empty model		
Random part	*Var*	*SD*	*% Var*
School (Intercept)	1.183	1.088	26.54

As was the case in the passing model, the inclusion of the predictor variables in model 2 caused notable shifts in the language profile effects. In dropout model 1, NAMS exhibited the highest dropout rates. However, in model 2, accounting for diverse background factors, mainstream students with a different home language showed significantly higher dropout rates (OR = 1.509, p = 0.039) than NAMS (OR = 1.198).

Next, differential effects for NAMS were checked again. This time, the interaction between the language profile variable and the SES-variable on the one hand, and the language profile variable and the cohort variable on the other hand showed significant results (model 3). While dropout rates are higher for Dutch-speaking mainstream students in case of a low SES, this effect is not present for their peers with a different home language. Moreover, although the 2013 cohort shows higher dropout rates among Dutch-speaking mainstream students, less NAMS from the 2013 cohort drop out of school than their 2009 peers. Similar to the previous model, this model found the lowest rates among Dutch-speaking mainstream students, with no significant effect between NAMS and mainstream students with another home language (p = 0.951).

To ease interpretation of the results above, Figure 3 displays the estimated probabilities of dropout based on the third model. An overview of the parameter estimates of models 1, 2, and 3 can be found in Table 10 (random effects) and Table 11 (fixed effects).

5 Discussion

Within the framework of equity in education, equitable education systems are defined as educational systems in which background factors do not predict educational success. Despite numerous education systems highlighting equity as a major policy aim, multiple studies have reported lower educational achievement among students with a migration background. However, there seems to be (1) a lack of focus on recent migrant students in

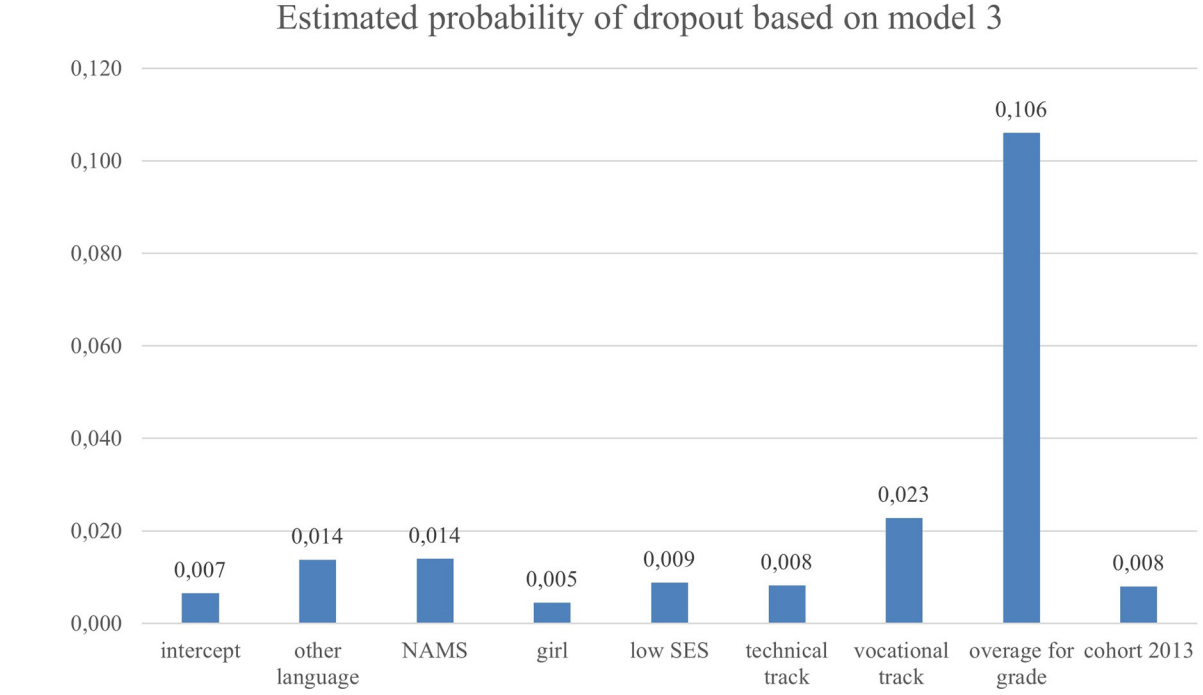

FIGURE 3
Estimated probability of dropout based on model 3.

TABLE 10 Parameter estimates for the random effects of dropout model.

	Model 1: language profile			Model 2: predictor variables			Model 3: differential effects		
Random part	*Var*	*SD*	*% Var*	*Var*	*SD*	*% Var*	*Var*	*SD*	*% Var*
School	0.911	0.955	21.69	0.262	0.512	7.38	0.262	0.512	7.38

particular—a vulnerable student population faced with unique challenges (Hood, 2003; Emery et al., 2020), and (2) a lack of studies investigating the interaction between migration background on the one hand, and background variables such as SES, home language and prior educational trajectory on the other (Kyriakides et al., 2018). Through multilevel logistic regression modeling, this study investigated NAMS' educational success in Flemish secondary education, operationalized through two outcome variables: passing and dropout. The results of the three research questions are discussed below.

NAMS have the lowest educational outcomes, measured by passing and dropout rates, in comparison to mainstream students with varying language backgrounds

In order to examine NAMS' educational outcomes, we first checked the outcomes of three student profiles (being NAMS, Dutch-speaking mainstream students and mainstream students with another home language) without accounting for any additional background factors. Both in terms of passing and dropout, NAMS have the lowest success rates in comparison to the other student profiles. The highest probability of success is found among Dutch-speaking mainstream students, followed by mainstream students with another home language. This latter group of mainstream students is likely to have a migration background less recent than NAMS' migration background. As such, low educational outcomes appear to be associated with a migration background, with the lowest outcomes observed among the most recently migrated students. These findings are consistent with prior research indicating that migrant students with a higher age of arrival typically achieve lower education levels in comparison to second-generation migrant students or migrant students who arrived at a younger age (Hermansen, 2017; Ansala et al., 2019).

The strong effect of having a recent migration background can have various explanations. In the first place, building on the integration and exposure hypotheses, the results indicate an unequal distribution of educational success based on students' language backgrounds (Duquet et al., 2006; Van Laere et al., 2014). Namely, both NAMS and students with an additional home language have a language background different to the language of instruction, potentially creating obstacles to their educational performance. However, NAMS are faced with a double challenge related to language (Goldenberg, 2008). Not only are they learning new skills and content at school, they are also still in the process of acquiring the academic language in which this subject matter is taught—a process taking many years. Thus, given that NAMS are in the initial stages of language acquisition, they appear to face the greatest disadvantage in terms of their educational outcomes.

TABLE 11 Parameter estimates for the fixed effects of dropout model.

	Model 1: language profile			Model 2: predictor variables			Model 3: differential effects		
Fixed part	*B*	*SE*	*Sign*	*B*	*SE*	*Sign*	*B*	*SE*	*Sign*
Intercept	−2.938	0.049	***	−4.962	0.081	***	−5.029	0.082	***
Language profile (ref = Dutch)									
other language	0.961	0.053	***	0.412	0.057	***	0.758	0.101	***
NAMS	1.288	0.107	***	0.181	0.107		0.771	0.198	***
Gender (ref = male)				−0.364	0.046	***	−0.368	0.046	***
SES (ref = low)				0.182	0.048	***	0.305	0.056	***
Track (ref = academic)									
Technical				0.226	0.069	**	0.232	0.070	***
Vocational				1.276	0.070	***	1.271	0.070	***
Overage for grade				2.906	0.066	***	2.897	0.066	***
Cohort (ref = 2009)				0.135	0.043	**	0.210	0.050	***
LP other x low SES							−0.461	0.108	***
LP NAMS x low SES							−0.298	0.214	
LP other x cohort 2013							−0.177	0.105	
LP NAMS x cohort 2013							−0.851	0.209	***

*p < 0.05.
**p < 0.01.
***p < 0.001.

Secondly, NAMS' previous schooling might also play a role. Upon migrating to Flanders, NAMS may have previously participated in an alternative educational system with distinct curricula and learning goals (Duquet et al., 2006). When they then enroll in the Flemish education system at a later age than their native-born or second generation immigrant peers, they are expected to catch up with a large variety of curricular content at a rapid pace (Van Avermaet et al., 2017). This late enrolment likely has a negative impact on NAMS' chances to succeed at school.

All in all, these results shed light on NAMS' position in the Flemish secondary education system, suggesting that they are a student subgroup that require targeted focus and support due to the unique challenges they face upon entering secondary education.

After accounting for personal background and educational trajectory factors, NAMS' outcomes are similar to those of mainstream students with an additional home language

The question remains to what extent the aforementioned trends persist after accounting for background variables. Previous research has identified various background factors that account for differences in educational success among students. As such, we examined to what extent these factors related to personal background and educational trajectory might explain variations in educational success between NAMS, native Dutch-speaking students and students with a home language other than Dutch.

Firstly, we found that personal background and educational trajectory factors significantly impact students' educational outcomes. Both in terms of passing and dropout rates, our findings show that girls outperform boys, aligning with previous research suggesting that girls are best adapted to the school environment (Spinath et al., 2014). Moreover, in line with prior research noting an association between low SES and poor educational outcomes (Sirin, 2005), we found a strong negative impact of low maternal education levels on students' probability of passing and dropping out. To explain these trends, Kyriakides et al. (2018) claimed that for low-SES students, the home environment differs more strongly from the school environment, while this disparity is less pronounced for student from high-SES backgrounds. Moreover, it has been established that parents with different SES-statuses hold different views on their role in their child's development and education (Lareau, 2011).

Considering students' prior educational trajectories, we found that students in tracks preparing for the labor market attain lower educational success on average. Similarly, our results show that being overage for grade leads to lower outcomes. These effects are in line with prior studies (Chen et al., 2010; Van Laere et al., 2014; Dockx et al., 2019). Several explanations have been suggested to account for the lower educational success in these specific contexts. Firstly, the lower track placement and higher age for grade could be seen as a result of selection bias, as such characteristics are more common among students who showed poorer academic achievement in the first place (Dockx et al., 2019). Secondly, the lower performances in these specific contexts could be related to students' study involvement. For instance, Van Houtte and Stevens (2010) demonstrated the existence of cultures of futility in technical and vocational schools, indicating a limited sense of agency in academic performance, which ultimately results in students becoming disengaged from their education. In a similar sense, grade repeaters often experience a lack of educational challenge when repeating curricular content which they already master, negatively affecting their school engagement (Goos et al., 2021). Lastly, both lower track allocation and grade retention are often seen as educational practices which do not tackle learners' specific needs. For instance, Lavrijsen and Nicaise (2015) claim that "shifting students to a less demanding track, where the curriculum

is less challenging and the learning environment far from optimal, rather leads to ignoring learning difficulties instead of adequately addressing them" (p. 208). Similarly, grade repeaters are often faced with the same curricular content which they struggled with in the first place, causing them to develop negative attitudes toward schooling (Hwang and Cappella, 2018).

Two variables that shed light on the specific context of Flemish secondary education are transition grade and cohort. Namely, our findings revealed that passing rates are lower in transition grades, which are grades marking the transition from one stage of secondary education to the next. This suggests that teacher councils implement a more strict assessment of students and more often prevent them from passing during these transitional phases. Moreover, the cohort variable showed that students in the 2013 cohort were less likely to pass and more likely to dropout, suggesting less educational success in the most recent cohort. These results align with the downward trend in students' performance in the latest PISA-results (De Meyer et al., 2023).

After accounting for the aforementioned variables, the lowest educational outcomes were found among NAMS and mainstream students with other home languages, with no significant differences between the two groups. This shows that the extra negative impact for NAMS disappears after controlling for personal background and educational trajectory factors. Based on both previous research and our study sample, NAMS are overrepresented in the vocational tracks (Emery, 2022), with the majority of NAMS also being overage for grade (Van Avermaet et al., 2017). As such, given the negative impact of such educational trajectory indicators on students' outcomes, it is likely that the lowest success rates among NAMS highlighted above are primarily explained by their homogenous tracking in vocational tracks and younger age groups. Research has uncovered that such school placement for NAMS is often based on teachers' low educational expectations of these students. Moreover, these expectations are generally tied to the students' limited proficiency in the language of instruction (Emery, 2022). As such, these results confirm the "formidable barrier" (Hood, 2003), characterized by both limited language proficiency and navigation through a new education system, for NAMS in their educational trajectories. These additional hurdles faced by NAMS seem to primarily be placed in their transition from reception education to mainstream secondary education. Once NAMS have arrived in mainstream education, they are faced with similar inequities to mainstream students with additional language or migrant backgrounds.

5.1 NAMS' educational outcomes are differentially affected by background and educational trajectory factors in comparison to those of mainstream students with varying language backgrounds

Responding to the need for further investigation into the impact of interactions between students' background factors, our research examined the differential impacts of these background factors across three student profiles.

Firstly, our study shows that personal background factors do not necessarily carry the same weight for all student subgroups. For instance, while prior research suggested that the gender gap in favor of girls is largest for students of other ethnicities (Kingdon and Cassen, 2010), our study shows that NAMS are least affected by a gender gap. Moreover, consistent with previous research that has identified a larger SES-effect for mainstream students than for immigrant students (Salikutluk, 2016), we found a strong negative impact of low maternal education levels on Dutch-speaking mainstream students' probability of passing and dropping out, while this effect was not present for NAMS. It thus appears that NAMS do not experience added disadvantages as a result of having a low SES. However, at the same time, a high SES does not act as a buffer protecting NAMS from unfavorable educational outcomes. Prior studies already noted a similarly complex nature of the interactions between SES, migration background and achievement among migrant students (Strand, 2014b). Therefore, it has been suggested that, for migrant students in particular, the notion of SES should be considered differently. Namely, both high- and low-SES migrant are known to be concentrated in specific low-SES schools (Dewulf et al., 2019), which possibly overrides the influence of family SES. Furthermore, prior research has indicated that every migrant student, regardless of their family background, experiences the detrimental effects of low teacher expectations, ultimately impeding their educational achievement (Strand, 2014b).

Secondly, we found that students' passing and dropout rates are differentially affected by their educational background depending on their student profile. Namely, while being in the vocational track is associated with lower outcomes across all student profiles, this track has a more detrimental effect on Dutch-speaking mainstream students' passing rates than on NAMS' outcomes.

Lastly, our analysis showed a differential impact of cohort membership on dropout rates. Namely, while dropout rates were generally higher among the 2013 cohort, an opposite trend was observed among NAMS. This indicates that the Flemish education system succeeds in extending the duration of NAMS in schooling. This could be influenced by a range of factors, including a lower age entry age for NAMS in mainstream education, or a more effective approach in reception education.

Our analysis of the differential impact of background factors across student profiles seems to suggest that many of the background factors that have a detrimental effect on the outcomes of Dutch-speaking mainstream students, do not affect the outcomes of the lowest performing student groups as strongly. As such, it is possible that the hurdles associated to lower education outcomes for both NAMS and mainstream students with another home language, absorb the effects of factors that may be detrimental for mainstream students.

Referring back to the fairness dimension of equity, this study found an uneven distribution of educational achievement in Flemish secondary education, both in terms of passing and dropout rates. More specifically, students' outcomes depend on background factors such as (recent) migration background and SES. There is also an adverse impact of being in a more vocational track and

being overage for grade on students' outcomes—two factors which are more common among NAMS. These findings are in contrast with the stated Flemish educational policy which aims at equal educational opportunities for all students (Nicaise et al., 2015), but in line with prior international studies which have already uncovered substantial achievement gaps in Flemish education (OECD, 2019). As such, this study revealed the weak position of migrant students in this inequitable education system. While mainstream students seem disadvantaged by a low SES, NAMS in particular face a formidable barrier, characterized by a lack of academic proficiency in the language of instruction and by little experience in the new educational system.

6 Conclusion

This study has explored the educational outcomes of newly arrived migrant students (NAMS) in Flemish secondary education, operationalized through passing and dropout rates. The research aimed to understand the influence of having a recent migration background, along with other background variables such as SES, home language, and prior educational trajectory, on students' outcomes.

The findings revealed that NAMS generally experience the lowest educational success compared to mainstream students. This is largely attributed to the fact that NAMS are frequently placed in vocational tracks and in lower grades for their age. Moreover, the study highlighted the differential impacts of background factors on various student profiles. While mainstream students' educational outcomes were strongly influenced by SES, this was less pronounced for NAMS, indicating that the hurdles they face might overshadow the influence of SES.

Some limitations of this study should be mentioned. First, because of the structure of the data, longer-term migrants within the mainstream student subgroups could not be identified. Students were differentiated based on their home language use, which is a strong indicator of migration background (Birgier and Bar-Haim, 2023). However, it is likely that some of the Dutch-speaking mainstream students had a migration background, and vice versa. While the present study provided important insights into the achievement gaps faced by NAMS, further research could enhance our understanding of how the outcomes of more established migrant students compare to those of NAMS.

Second, the dataset was limited by the fact there was no differentiation between students who left Flemish secondary education due to dropping out and students who exited the Flemish education system due to migration. A number of underage migrants are compelled to leave Flanders yearly (Vanobbergen, 2013), many of which presumably are NAMS. Indeed, it is thus likely that the present estimation of dropouts among NAMS is slightly higher than the factual numbers. However, the study results are still in line with prior research showing that dropout is more common among migrant students than the mainstream student population (Duquet et al., 2006).

Lastly, there are doubtlessly more factors playing a role in the achievement gap of NAMS than the background variables we controlled for. For instance, educational effectiveness research has shown that the school and classroom level matter (Reynolds et al., 2014). Additionally, student level factors such as wellbeing (DeŽan and Sedmak, 2023), personality and engagement (Lamote et al., 2014) also play a key role in the educational success of migrant students. Including such variables would assumably provide more insights into the achievement gaps experienced by NAMS, but such data was not accessible. Future research looking into these additional variables could therefore deepen our understanding of effective school and classroom practices for NAMS.

In conclusion, this research underscores the inequities faced by NAMS within the Flemish secondary education system. If the aim is to achieve a more equitable education system for NAMS in particular, specific educational practices should be critically examined. Firstly, track allocation is a practice that warrants serious consideration. Namely, schools and teachers should ensure that these students are placed in tracks aligned with their interests, rather than automatically directing them to less academically-focused tracks. Secondly, secondary schools could consider revising their policy to allow the students the necessary time to achieve a high level of school language proficiency. More specifically, by providing NAMS with language support in mainstream classes, regular education schools can assist them in this language learning process. Lastly, schools could consider making minor adjustments to NAMS' curricula, including modifying specific learning objectives to align more effectively with the needs of this student group (Vandecandelaere, 2020). Such modifications could enhance NAMS' educational trajectories throughout the school year, ultimately resulting in a positive certificate being awarded by the teacher council at the end of the year.

Data availability statement

The dataset used in this study was provided by the Flemish Department of Education under a confidentiality agreement. As per the terms of the agreement, the data cannot be shared with third parties. Therefore, the dataset used in this research is restricted from being shared or disseminated outside the scope of this study. Requests to access these datasets should be directed to: bart.deygers@ugent.be.

Ethics statement

The studies involving humans were approved by Ghent University Ethics Committee and Free University of Brussels Ethics Committee. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required from the participants or the participants' legal guardians/next of kin in accordance with the national legislation and institutional requirements.

Author contributions

SS: Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data

curation, Conceptualization. MV: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. DK: Writing – review & editing, Methodology, Funding acquisition, Conceptualization. BD: Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization.

Funding

The author(s) declare that financial support was received for the research, authorship, and/or publication of this article. This research was funded by the Ghent University DOWA Research Fund.

Acknowledgments

During the preparation of this manuscript, artificial intelligence software was used. Specifically, the AI chatbot ChatGPT-4 was used for reviewing certain sections to identify potential grammatical or structural issues and for refining idiomatic expressions and vocabulary throughout the text. We would like to thank the Flemish Department of Education and Training for giving us access to their data.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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