



# Degree completion among students with an immigrant background in short-cycle welfare-oriented professional education

Pål Oskar Hundebo<sup>1</sup> 

Received: 8 March 2022 / Accepted: 4 January 2023 / Published online: 20 May 2023  
© The Author(s) 2023

## Abstract

This article examines degree completion among students with an immigrant background who enrolled in professional bachelor's degree programmes in early childhood or teacher education, nursing, or social work. By using the high-quality Norwegian register data covering national cohorts of students enrolled in higher education between 1990 and 2014, the analysis indicates that immigrants and native-born descendants of immigrants were less likely to complete these study programmes, compared with native majority students. Explanations for this could be linked to ethnic minorities being inadequately integrated—socially and academically—in these study programmes and therefore less able and/or motivated to stay enrolled until graduation. In all four professional study programmes, students with an immigrant background had comparatively higher probabilities of transferring to other study programmes or dropping out of higher education altogether. On the positive side, minority-majority gaps in degree completion were considerably smaller for those who achieved academically well in these professional study programmes, measured as high first-year GPAs. However, it is quite alarming that immigrants and immigrant descendants who achieved poor academic results were substantially less likely to complete a degree than native majority students with correspondingly poor results.

**Keywords** Ethnic diversity · Ethnic minority students · Degree completion · Dropout · Higher education · Welfare professions

## Introduction

Occupational representation is often neglected in public debates on immigrant integration. Achieving ethnic diversity is particularly important among 'welfare professionals' delivering vital public services, such as nurses and teachers. In strategies to secure adequate supplies of trained professionals, authorities place pressure on higher education (HE) institutions to recruit and retain a diversified student body reflecting

---

✉ Pål Oskar Hundebo  
paloskar.hundebo@oslomet.no

<sup>1</sup> Centre for the Study of Professions, Oslo Metropolitan University, Oslo, Norway

the population regarding sex/gender, socio-economic backgrounds, and not least ethnicities (e.g., Equality Act, 2010; Norwegian Ministries, 2020). While ethnic diversity among nurses and other healthcare professionals is an important aspect in providing adequate healthcare to increasing and ageing immigrant populations (e.g., Saha & Shipman, 2006), teachers with an immigrant background act as good role models for ethnic minority pupils, enhance their learning outcomes, and counteract ethnic discrimination in schools (e.g., European Commission, 2016; Howard, 2010). In several European immigrant-receiving countries, such as the UK, Germany, and Denmark, substantial discrepancies in ethnic diversity among pupils and scarcity of teachers with an immigrant background were documented (European Commission, 2016). The proportion of healthcare and social workers with an immigrant background varies across Europe; while being over-represented in the UK (House of Commons Library, 2020) they are under-represented in other immigrant-dense countries, such as Sweden (Statistics Sweden, 2022) and Norway (Statistics Norway, 2022d).

This article examines the extent to which students with an immigrant background in Norway who pursue a professional bachelor's degree in early childhood education, teaching, nursing, or social work complete their degree, and whether those who do not complete tend to transfer to alternative study programmes. Generally, the study programmes examined constitute a large proportion of Norwegian bachelor's degrees. Nevertheless, recruitment rates of immigrants and descendants of immigrants (i.e., native-born children to two immigrant parents) have been persistently low in teacher education (Statistics Norway, 2022b), which contributes to low proportions of school-teachers with an immigrant background. The immigrant population is also under-represented among kindergarten teachers (Statistics Norway, 2022a), healthcare and social workers (Statistics Norway, 2022d).<sup>1</sup> The proportion of students with an immigrant background is increasing in study programmes preparing for these professions (Statistics Norway, 2022b). However, the extent to which they complete a degree compared with native majority students enrolled in these study programmes has yet to have been examined. This article will contribute to bridging this knowledge gap.

A recent Norwegian report shows that immigrants are more likely to exit HE without a completed degree (i.e., system dropout), whereas descendants more often transfer between study programmes (Andresen & Lervåg, 2022). However, the report did not examine variations between study programmes. Furthermore, the definition of dropout included students who had been absent from HE for merely one year, which is problematic because it is not uncommon for students to have a one-year break in their studying for a range of reasons. Using a similar one-year dropout measure, Helgeland (2008) found that students with an immigrant background were more likely to drop out from teacher education/pedagogy and healthcare-oriented bachelor's degree programmes. However, the extent to which those who did not drop out ultimately completed a degree or transferred to alternative study programmes was not examined.

Research from Norway and other European countries indicates that students with an immigrant background enrolled in nursing, social work, and teacher education struggle to become socially and academically integrated (Bernard et al., 2011; European

---

<sup>1</sup> In 2021, 19.7 per cent of the adult Norwegian working population had an immigrant background. Corresponding figures were 8.0 per cent among primary school teachers, 10.2 per cent among kindergarten teachers (Statistics Norway, 2022a), and 15.2 per cent among employees in human health services, including nursing and social work (Statistics Norway, 2022d).

Commission, 2016; Flateland et al., 2019). This may contribute to higher dropout and transfer rates among these students. In addition, individuals with an immigrant background tend to favour HE leading to careers with high salaries and social prestige (Askvik, 2019; Ma, 2009), which are not hallmarks of welfare-oriented bachelor's degrees. Thus, they might be more prone to transfer away from welfare-oriented bachelor's degree programmes. In fact, students with an immigrant background enrolled in nursing education expressed being driven by stronger extrinsic motivations, such as salary and status, compared with native majority co-students, while also holding lower expectations to assume positions related to nursing degrees or to pursue nursing specialisation (Maurud et al., 2022).

The empirical analysis was undertaken by using high-quality Norwegian register data covering national cohorts of students enrolled in every bachelor's degree programme in early childhood education, teaching, nursing, and social work between 1990 and 2014. The data track students annually through the HE system and enable detailed analyses of relatively small groups of students with an immigrant background. Rates of graduation, transfer, and non-completion in these study programmes have not previously been explored as the juxtaposition of mutually exclusive categories. The distinction between non-completion and transfer offers some indication of whether students with an immigrant background tend to leave the study programmes examined before obtaining a degree because they might find them academically and socially challenging, and/or instead opt for alternative HE degrees.

## The Norwegian context

### The immigrant population

Until a wave of Pakistani, Turkish, and Moroccan 'guest workers' arrived in the late 1960s, non-European immigrants were uncommon in Norway (Brochmann & Kjeldstadli, 2008). Since then, large-scale immigration has meant that the immigrant population increased from comprising 1.5 per cent of the Norwegian population in 1970 to a corresponding proportion of 18.9 per cent by 2022 (15.1 per cent immigrants and 3.8 per cent native-born descendants). In 2022, 82.1 per cent of the immigrant population had an origin in so-called 'non-Western countries', particularly Asian (including Turkey) (33.4 per cent), Eastern European (31.7 per cent), and African (14.1 per cent) countries (Statistics Norway, 2022c). Although it is a heterogeneous group, the non-Western immigrant population is over-represented in statistics on child poverty, low education, low income, and unemployment, both compared with the (non-migrant) majority population and the Western immigrant population (Vrålstad & Wiggen, 2017). However, many youths with a non-Western origin, particularly descendants, have achieved socio-economic mobility by attaining HE (Hermansen, 2016).

### Students with an immigrant background in higher education

The proportion of the immigrant population enrolling in Norwegian HE has gradually increased in recent decades. Whereas 21.1 per cent of the Norwegian population aged 19 to 34 were enrolled in HE in 2021, the corresponding figure for immigrants alone was 12.1 per cent. Contrastingly, descendants were over-represented with a corresponding figure of

32.4 per cent (Statistics Norway, 2022b). Descendants with origins in some non-Western countries, such as Sri Lanka, China, and Vietnam, are particularly over-represented in HE (Steinkellner, 2017). In fact, compared with native majority peers, non-Western youths are more likely to enrol in HE despite having a low grade point average (GPA) from upper secondary education and low socio-economic backgrounds (Askvik, 2019). Additionally, those who achieve well in upper secondary education are relatively more inclined to choose long and prestigious study programmes requiring high GPAs for admission, such as medicine, which usually lead to well-paid high-status occupations/professions. Those with lower GPAs tend to opt for bachelor's degrees in science, engineering, and business administration rather than welfare-oriented degrees, such as in social work and teaching (Drange & Helland, 2017; Støren, 2011). Part of this pattern might be because the latter degrees qualify for professions associated with lower status and salaries (Helland & Ljunggren, 2021).

In 2021, immigrants and descendants made up 11.6 and 4.9 per cent of HE enrollees, while their corresponding proportions were 3.7 and 0.9 per cent in general teacher education (*allmennlærerutdanning*). Whereas immigrants have become over-represented in early childhood education (14.8 per cent) and nursing (14.6 per cent) descendants were under-represented in nursing (3.3 per cent) (Statistics Norway, 2022b). Similar statistics have not been published for study programmes in social work, but the data analysed for this article indicate that particularly immigrants were under-represented in such study programmes at least until 2014.

### Short-cycle welfare-oriented professional degrees

Despite differences in academic content, bachelor's degree programmes in early childhood education, teaching, nursing, and social work have several similarities. They prepare students for in-demand welfare professions and practice placements are integrated into curriculum and training. This is most pronounced in nursing education, in which half of the training is in practice placements. Thus, students face the realities and demands of their future professions early on. This may scare away students who find the professional practice overly difficult or unpleasant. On the other hand, getting a real experience of their future profession might motivate students to complete their degree. High levels of job security and good labour market conditions point in the same direction. Moreover, those with incomplete degrees have poor prospects for employment in the respective professions. To work as a nurse, a completed degree is an absolute requirement, and for teachers, degree holders are paid more and are first in line to get a permanent position. Compared with more 'general' bachelor's degree programmes, completion rates have been relatively high (60 to 80 per cent) in these professional study programmes, particularly in nursing and social work. Female students are relatively more likely to complete these programmes. Moreover, contrary to a common trend in HE, students from lower socio-economic backgrounds are no less likely than students with higher socio-economic backgrounds to complete a degree, which might be linked to the high proportions of students from lower socio-economic backgrounds recruited to these programmes (Helland & Hovdhaugen, 2021).

### Theoretical framework

Numerous explanations of student retention in HE have been proposed. In sum, they assume that students drop out due to *active choices* linked to lacking interest and motivation, uncertain career prospects, feelings of alienation in HE, and rational decisions

about ‘cost-effectiveness’ vis-à-vis profitable options (e.g., job offers), and/or *forced transitions* linked to academic failure, lack of finance and time to stay enrolled, and/or family obligations. Such choices and restraints are often intertwined (Behr et al., 2020). Tinto’s interactionalist model of student retention is the most elaborate and has reached near ‘paradigmatic status’ (Braxton, 2016). Tinto’s model bases students’ departure from HE institutions on three interrelated components: (1) pre-enrolment characteristics, (2) experiences at the institutions, and (3) external conditions regarding family obligations and finances (Tinto, 1993). This model serves as the theoretical framework for the empirical analysis below.<sup>2</sup>

Tinto (1993) explains students’ experiences in HE institutions in terms of social and academic integration. *Social integration* involves psychosocial comfort and sense of belonging in HE environments and thus affects how students relate to affinity groups and interact with co-students, academics, and other staff. *Academic integration* concerns students’ ability to fulfil academic requirements and expectations in their HE institutions and study programmes, and whether they perceive the education as having practical value for a future career. Students’ immigrant status falls within pre-enrolment characteristics in Tinto’s scheme, as do sex, age of enrolment, and previous HE experiences. Moreover, these characteristics are likely to affect students’ social and academic integration, and external factors related to their ability to stay enrolled until graduation.

## Challenges of social and academic integration among ethnic minority students

Nursing students with an immigrant background were found to experience social isolation and to lack opportunities to integrate with native majority students. Findings also allude to that some are treated poorly based on their ethnicity, particularly by patients in clinical practice (Flateland et al., 2019; Johannessen et al., 2022; Mattila et al., 2010). Nursing academics in Norway reported episodes in which native majority students expressed concerns about collaborating with students with an immigrant background, due to (perceived) linguistic and cultural barriers (Nordfjell & Nielsen, 2019). In social work and teacher education, students with an immigrant background have also reported experiences of social isolation and discrimination (Bernard et al., 2011; European Commission, 2016).

Turning to academic integration, research from Norway found that practice supervision of students with an immigrant background in nursing often requires more time and adaption because they lack communication proficiency in the majority language. Supervisors were uncertain as to whether these students met learning objectives but also feared being perceived as prejudiced when spending extra time establishing trust with them (Skisland et al., 2018). Moreover, some nursing students with an immigrant

---

<sup>2</sup> Tinto’s model has been criticised for being less suitable for explaining student attrition among ethnic minorities (Guiffrida, 2006). However, several empirical analyses have shown that the model’s key concepts of social and academic integration are fruitful in explaining differences in study progression and dropping out between ethnic minority and majority students (Severiens & Wolff, 2008). Moreover, the qualitative studies referred to in this article indicate that students with an immigrant background enrolled in various welfare-oriented study programmes, such as nursing, face some unique challenges linked to achieving social and academic integration.

background claimed that it was difficult for them to achieve good grades, compared with native majority students, even if they themselves had attained high grades in upper secondary education (Flateland et al., 2019). In the UK, ethnic minority students in social work education were found to be more likely to fail practice training, and ultimately the entire study programme, due to language barriers (Bernard et al., 2011). Such challenges might apply more to immigrants due to poor skills in the majority language and less adaptation to the majority culture, compared with native-born descendants who had their entire schooling alongside native majority peers.

The contextual facts, theory, and previous research elaborated above give reasons to expect that students with an immigrant background enrolled in welfare-oriented study programmes are less likely than native majority students to complete a degree. Communicational and cultural impediments seem to create extra academic challenges for students with an immigrant background to meet the professional requirements, particularly in practice training. Hence, those who are poorly integrated academically, measured according to low GPAs in the empirical analysis below, are particularly expected to be less likely to complete a degree, while minority-majority gaps in graduation rates might be narrower among those who achieve better. Additionally, those who also encounter social isolation and/or discrimination might have weakened confidence in their intended future profession.

## Data and methods

The empirical analysis employs national register data administered by Statistics Norway covering all students who were registered in the Norwegian HE system between 1990 and 2014. All time-variant variables were updated annually.

## Sample definition

The sample comprised 188,898 students who were aged 19 to 40 years old upon enrolment in a study programme in early childhood education, teaching, nursing, or social work between 1990 and 2009. Usually, Norwegians complete upper secondary education at age 19, but these study programmes recruit relatively large numbers of students in their twenties and thirties. Furthermore, the sample was restricted to native majority students, defined as those who were Norwegian-born to two Norwegian-born parents, and students who had either migrated from a non-Western country or who were Norwegian-born to two non-Western immigrant parents.<sup>3</sup> The relatively small number of students with an immigrant background enrolled in the study programmes examined does not allow for analyses by specific origin countries (or regions). Thus, it was considered wise to focus solely on those with a non-Western origin because individuals with origins in a Western country are more like the majority population in terms of educational attainment (Hermansen, 2016). This sample definition includes

---

<sup>3</sup> Non-Western countries were defined as countries in Eastern Europe (including all former Eastern Bloc countries, except East Germany (GDR)), Asia (including Turkey), Africa, South/Central America (including Mexico and the Caribbean), and Oceania (except Australia and New Zealand). The small number of students with one Western immigrant parent and one non-Western immigrant parent were classified according to their mother's country of birth.

76.8 per cent of all immigrants and descendants, combined, in the age group 19 to 40 who enrolled in the study programmes examined between 1990 and 2009. Students from ‘mixed-families’ (i.e., one foreign-born parent and one Norwegian-born parent) and those born abroad to two Norwegian-born parents were not included in the sample.

Nearly a quarter of the students (23.1 per cent) had experience of HE prior to enrolling in one of the study programmes examined. Those who had sequentially enrolled in two of these programmes (5.9 per cent) in different years during 1990 to 2009 were included twice in the sample regardless of whether they had completed any of the programmes.

## Variable measurement

*Study outcome* constitutes the dependent variable which was constructed by tracking students up to two years beyond the prescribed duration of their study programmes. Most students were enrolled in three-year programmes and were thus tracked for up to five years. However, 86.4 per cent of the student teachers were tracked for up to six years because their programmes had a duration of four years. The outcome was classified as *graduation* when students had completed a degree within five/six years. For those who instead enrolled in an alternative study programme within five/six years, including one of the other programmes examined, their outcome was classified as *transfer*. The outcome was classified as *non-completion* for the rest of the students, most of whom had exited the HE system altogether. Less than 2 per cent of the non-completed students were still enrolled in the same study programmes beyond five/six years.<sup>4</sup>

*Immigrant status* is the central independent variable, distinguishing between (1) the native majority ( $n = 182,714$ ), (2) immigrants with origins in non-Western countries who arrived after they turned seven ( $n = 4,596$ ), and (3) descendants of non-Western immigrants ( $n = 1588$ ), defined as Norwegian-born children to two immigrant parents or immigrants who arrived prior to turning seven.<sup>5</sup> Interaction terms between immigrant status and each study programme explore variations in minority-majority gaps in study outcomes between programmes.

*First-year GPA* attained by students was included as a proxy for their academic integration early in their course of study, expressing their ability and motivation to stay enrolled and, ultimately, completing their degrees.<sup>6</sup> Although register data do not provide direct access to students’ subjective experiences, GPA attained during the first academic year offers some indication of their academic ability and whether they had

<sup>4</sup> Somewhat higher proportions of immigrants (2.2 to 5.6 per cent) and descendants (2.2 to 4.9 per cent) were still enrolled after five/six years, depending on the study programme. However, more than a half of these students eventually transferred or dropped out rather than graduating.

<sup>5</sup> The joint group of native-born descendants ( $n = 788$ ) and immigrants who arrived before turning seven ( $n = 800$ ) was constructed for two reasons. First, previous Norwegian research found that immigrants arriving before school starting age are comparable with native-born descendants in terms of education attainments and labour market outcomes (Hermansen, 2016). Second, ‘inflating’ the relatively small groups of native-born descendants who enrolled in each of the four study programmes during 1990 to 2009 enabled more detailed analyses.

<sup>6</sup> Ideally, the analysis should also control for students’ GPAs from upper secondary education as a proxy for academic ability prior to HE. However, this was not feasible since the data only contain upper secondary GPAs for 27.2 per cent of the students. Among those whose GPAs are registered, values are overall higher for female students, and for the native majority compared with immigrants and descendants.



been able to adapt to HE and in their chosen study programmes. In that sense, GPA is considered to be a mechanism for students' graduation probability. Thus, anticipated gaps in degree completion between students with and without an immigrant background might be less pronounced among students who attained similar GPAs.

To compare GPAs across years, study programmes, and HE institutions, they were converted to standardised z-scores separately for each study programme according to year and HE institution. The z-scored GPAs were then divided into relative deciles (1–10) that were treated as separate dummies (0–1) coded 1 only for students whose GPAs fall into a given decile. Since GPAs were not registered for 20.7 per cent of the students, an additional dummy was included for this category. Non-registered GPAs chiefly apply to students who transferred to alternative study programmes or dropped out of HE before obtaining any grades in the study programmes examined. However, to a lesser extent, GPAs are also missing for students who completed these study programmes or transferred/dropped out during the second year of study, or later, because their grades unfortunately were not registered in the data. In any case, estimates from the analyses employing students' GPAs must be read with some caution. For transparency, Appendix 1 (Table 2) displays the distribution of students with non-registered GPAs by immigrant status, study programme, and study outcome. As a robustness check to verify that the dummy for non-registered GPAs does not create noteworthy bias in the analysis, regression models with and without this dummy were tested, and these yielded corresponding results.<sup>7</sup>

*Sex* was included as a control because female students vastly outnumber male students in the study programmes examined and were found to be more likely to complete a degree than male students (Helland & Hovdhaugen, 2021). *Enrolment year* controls for variations in study outcome related to changes in curriculums and structures of study programmes. Students' *age at enrolment* and a dummy for *previous experience with HE* were also added as controls.<sup>8</sup>

Table 1 displays descriptive statistics for the variables by study programme and immigrant status. All four programmes were clearly female dominated, but the female proportion was slightly lower for immigrants and descendants except in teacher education. Immigrants and descendants performed less well than the native majority in all four programmes, as indicated by mean first-year GPAs. Higher mean enrolment years for immigrants and descendants indicate that their proportions of new enrollees have increased between 1990 and 2009.

---

<sup>7</sup> Applying dummy variables for missing values is disputed in the methods literature (e.g., Allison, 2002; Jones, 1996). Imputation of a constant value for missing values is quite common when missingness is totally random. However, in the present article, this is not the case as non-registered GPAs largely apply to students transferring or dropping out before obtaining any grades. Still, various procedures of imputing mean GPA values for students with non-registered GPAs were tested, but regressions with imputed values did not produce reliable results. The solution of employing dummies for GPA categories (deciles) plus an additional dummy for non-registered GPAs follows the same approach as the dummy for non-registered parental education in Hermansen (2016).

<sup>8</sup> Initially, parental education was to be included as a control for students' social backgrounds. This was not feasible because parental education was not registered for 70.9 per cent of immigrants in the sample. However, alternative analyses exclusively for the descendants and native majority students (not included in this article) show that controlling for parental education does not alter the minority-majority gap in graduation probabilities between these groups. This corresponds with previous research which found that students' social backgrounds, regardless of immigrant status, are not associated with variation in degree completion in the study programmes examined (c.f., Helland & Hovdhaugen, 2021).



**Table 1** Descriptive statistics by immigrant status and professional study programme ( $N=188,898$ )

| Variables  | Native majority |                 | Immigrants |                 | Descendants |                 | Range       |
|--|-----------------|-----------------|------------|-----------------|-------------|-----------------|-------------|
|  | Mean            | SD <sup>a</sup> | Mean       | SD <sup>a</sup> | Mean        | SD <sup>a</sup> |             |
| Female   |                 |                 |            |                 |             |                 |             |
| Early childhood education  | 0.902           |                 | 0.830      |                 | 0.798       |                 | 0–1         |
| Teaching   | 0.685           |                 | 0.696      |                 | 0.691       |                 | 0–1         |
| Nursing  | 0.889           |                 | 0.776      |                 | 0.845       |                 | 0–1         |
| Social work  | 0.819           |                 | 0.694      |                 | 0.778       |                 | 0–1         |
| Previous experience with HE  | 0.233           |                 | 0.194      |                 | 0.188       |                 | 0–1         |
| Age at enrolment   | 24.2            | 5.4             | 28.1       | 6.1             | 21.6        | 3.2             | 19–40       |
| Enrolment year   |                 |                 |            |                 |             |                 |             |
| Early childhood education  | 1,999.5         | 5.6             | 2,002.4    | 5.1             | 2,004.3     | 4.4             | 1,990–2,009 |
| Teaching   | 1,999.3         | 5.3             | 2,003.3    | 4.9             | 2,003.8     | 4.6             | 1,990–2,009 |
| Nursing  | 2,000.1         | 5.5             | 2,002.1    | 5.3             | 2,004.3     | 4.0             | 1,990–2,009 |
| Social work  | 2,000.5         | 5.3             | 2,002.6    | 5.1             | 2,005.2     | 3.7             | 1,990–2,009 |
| GPA from first year of professional education (standardised rank) <sup>b</sup> |                 |                 |            |                 |             |                 |             |
| Early childhood education  | 5.5             | 2.6             | 4.1        | 2.6             | 4.1         | 2.5             | 1–10        |
| Teaching   | 5.4             | 2.8             | 5.1        | 2.9             | 4.2         | 2.5             | 1–10        |
| Nursing  | 5.6             | 2.9             | 4.1        | 2.8             | 4.0         | 2.6             | 1–10        |
| Social work  | 5.8             | 2.9             | 4.5        | 3.0             | 4.1         | 2.9             | 1–10        |
| Number of observations   | 182,714         |                 | 4,596      |                 | 1,588       |                 |             |

<sup>a</sup> Standard deviations are not presented for discrete variables, as the full distribution of responses is shown.

<sup>b</sup> The relative rank of students' GPAs per study programme is solely calculated for those whose grades are registered. Grades were not registered for 20.6 per cent of the native majority, 24.9 per cent of the immigrants, and 20.5 per cent of the descendants.

Source: Author's calculations based on administrative register data from Statistics Norway.

## Statistical models

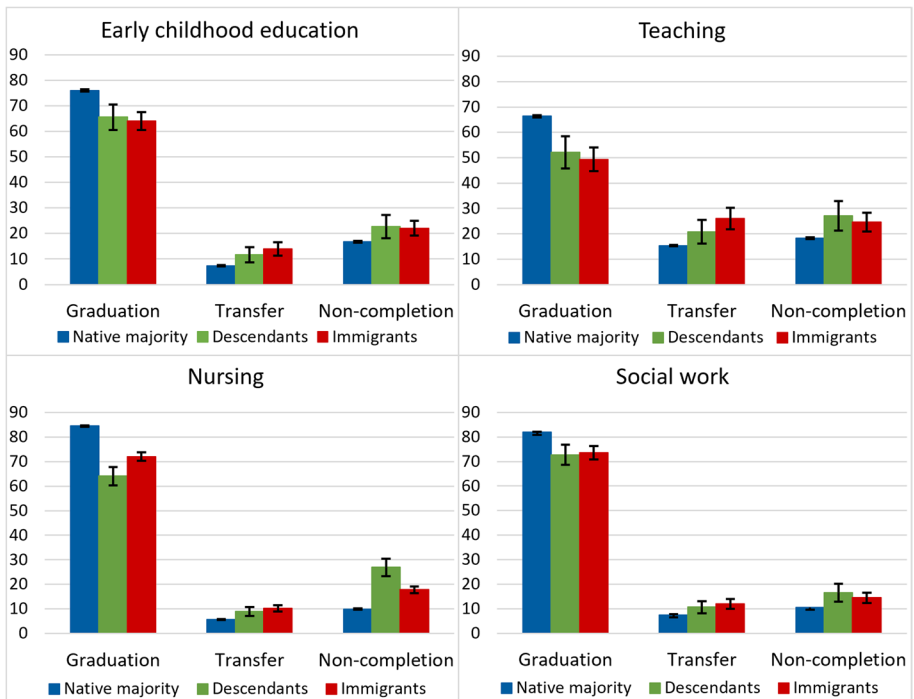
Multinomial logistic regression was employed to explore variation in study outcomes—graduation, transfer, and non-completion—in each of the four professional study programmes according to students' immigrant status. To simplify interpretation, key findings from two nested regression models are presented as graphed average marginal effects (AME) in Figures 1, 2, and 3. Moreover, presenting results as AME is necessary to compare them across models.<sup>9</sup> The base model (c.f., Figures 1 and 2) considers variation in study outcomes between immigrants, descendants, and the native majority in each professional programme, controlled for their sex, previous experience with HE, age and year of enrolment. The adjusted model (c.f., Figures 2 and 3) also includes students' first-year GPA as a proxy for ability and academic integration and thereby a mechanism for variation in degree completion. Coefficients from the full regression models presented as AME are available for scrutiny in Appendix 2 (Table 3).

<sup>9</sup> Multinomial log-odds (logits) are not comparable across models due to unobserved heterogeneity. However, this issue is circumvented when presenting results as AME. For a thorough methodological explanation of this issue, see Mood (2010).

## Results from empirical analysis

### Variation in rates of graduation, transfer, and non-completion by immigrant status

Figure 1 displays estimated probabilities of graduation, transfer, and non-completion separately for immigrants, descendants, and the native majority in professional study programmes of early childhood education, teaching, nursing, and social work. In all four programmes, immigrants and descendants were predicted to be statistically significantly less likely to complete a degree, compared with the native majority, and more likely to transfer to other study programmes or to exit the HE system altogether (non-completion). Surprisingly, gaps between immigrants and descendants are only statistically significant in nursing, in which, contrary to expectations, descendants had a lower graduation probability and a higher non-completion probability. Thus, anticipated lower graduation likelihood among immigrants relative to descendants were not confirmed in any of the study programmes examined. Nevertheless, the main expectation that students with an immigrant background in these study programmes are less likely than the native majority to complete the degree, and thus more likely to transfer or drop out of HE altogether, was indeed confirmed.



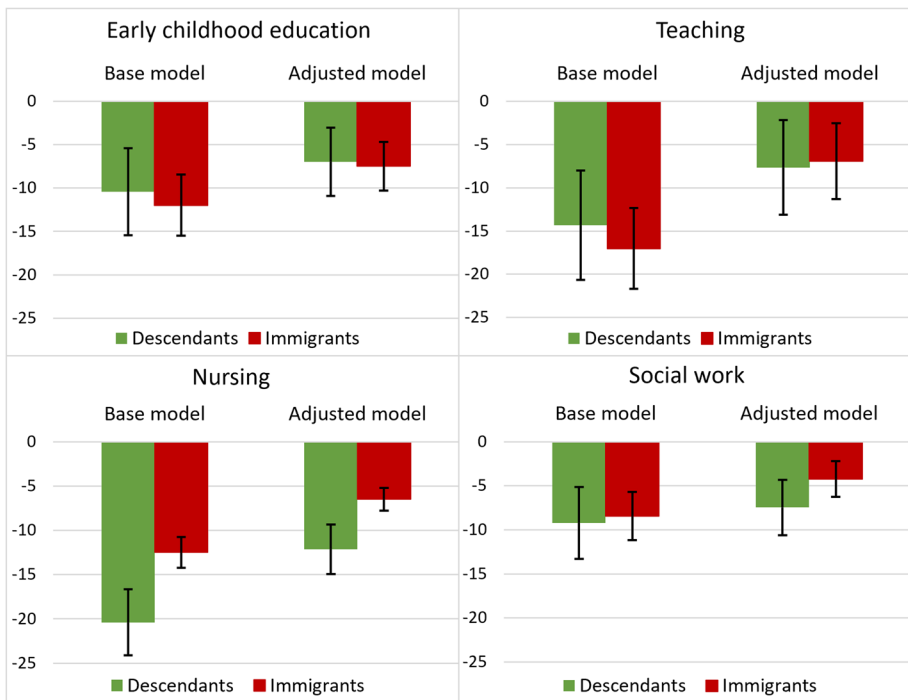
**Fig. 1** Estimated probabilities\* of graduation, transfer, and non-completion within five/six years from enrollment, by professional study programme and immigrant status ( $N=188,898$ ). Notes: \*The probabilities were estimated as AME with 95% confidence intervals from coefficients in the base model in Appendix 2 (Table 3). Estimated differences in each outcome between immigrants and descendants within each study programme are not statistically significant, as indicated by overlapping confidence intervals, except for graduation and non-completion in nursing.

In nursing, the predicted graduation rate was 72 per cent for immigrants and 64 per cent for descendants, contrasting with 84 per cent for the native majority. Non-completion rates for immigrants and descendants in nursing were 18 and 27 per cent respectively, while their transfer rates were less pronounced (about 10 per cent). In teacher education, on the other hand, both transfer and non-completion rates were substantial among immigrants and descendants (21 to 27 per cent), leaving them a graduation rate of 50 to 52 per cent, contrasting with 67 per cent for the native majority. Relatively lower graduation rates and higher rates of transfer and non-completion for students with an immigrant background were also noteworthy in early childhood education and social work.

### Minority-majority gaps in graduation adjusted for GPA

The remaining analyses focus on the predicted minority-majority graduation gaps and explore whether these gaps are linked to variation in students’ first-year GPAs. As mentioned, GPAs are considered to be a measure of students’ academic integration and their ability to stay enrolled, and thus a mechanism for degree completion.

Figure 2 displays estimated minority-majority gaps in graduation probabilities as AME before (base model) and after adjusting for first-year GPAs. As also indicated



**Fig. 2** Estimated ethnic minority-majority gaps\* in graduation probabilities within five/six years from enrolment, by professional study programme before and after adjusting for level of GPAs attained in the first academic year ( $N=188,898$ ). Reference: the native majority. Note: \*The gaps were estimated as AME with 95% confidence intervals from coefficients in the base model and adjusted model in Appendix 2 (Table 3).

in Figure 1, minority-majority gaps estimated from the base model were not statistically significantly different for immigrants and descendants, except for a considerably larger gap for descendants in nursing education (20 versus 13 percentage points). Initial minority-majority graduation gaps were large among student teachers (14 to 17 percentage points), but also noteworthy in early childhood education and social work.

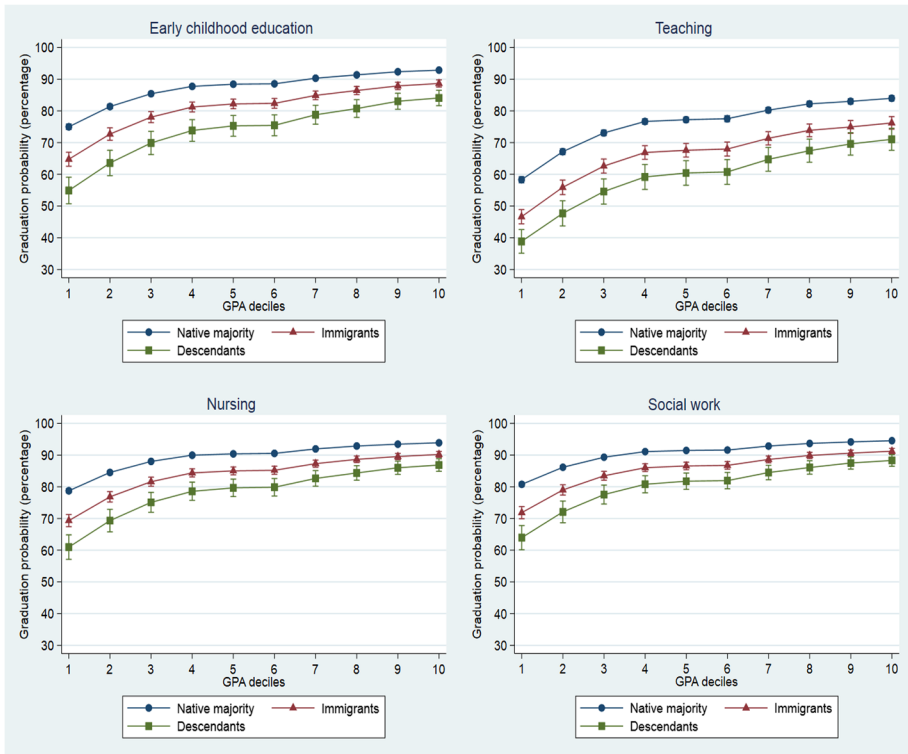
In the adjusted model, minority-majority graduation gaps were somewhat reduced by taking students' first-year GPAs into account. Reductions in graduation gaps were most pronounced for immigrants in teacher education (10 percentage points) and descendants in nursing (8 percentage points), while otherwise quite moderate (2 to 6 percentage points). In sum, Figure 2 suggests that students with an immigrant background overall were less likely to complete a degree partly because they, on average, achieved poorer academic results than native majority students. As expected, minority-majority graduation gaps were reduced when comparing students with similar GPA levels. Still, the relatively large remaining gaps among students with similar GPA levels are associated with additional factors not included in the analysis. However, as demonstrated in the next section, these remaining gaps did in fact vary by GPA levels.

### **Graduation by GPA levels: high-achievers are narrowing the minority-majority gaps**

Figure 3 displays estimated differences in graduation probabilities between immigrants, descendants, and the native majority in each professional study programme according to their first-year GPA levels. All graphs indicate that graduation rates increase together with GPA levels, but not in a completely uniform additive manner. The increase in graduation probabilities is steeper for the lower GPA levels. Moreover, in all four study programmes, the intercepts between GPA levels and graduation rates are lower for immigrants and descendants, but their graphs are also slightly steeper. Surprisingly, this pattern is more pronounced for descendants than for immigrants. This suggests that students with an immigrant background who achieved low academic results (GPAs) during their first year of enrolment were particularly less likely to complete a degree in these study programmes, compared with native majority students with similar low results, whereas the minority-majority graduation gaps decreased with increasing GPA levels. Descendants also had noteworthy graduation gaps with immigrants which decreased with higher GPAs.<sup>10</sup> Although minority-majority gaps were narrowing with increasing GPA levels there were remaining gaps among students with high GPAs.

Minority-majority gaps among students with the poorest GPAs were 9 to 12 percentage points for immigrants and 17 to 20 percentage points for descendants across study programmes. In teacher education, gaps for those with the highest GPAs were merely reduced to 8 and 13 percentage points respectively for immigrants and descendants, while corresponding gaps were respectively 3 to 4 and 6 to 9 percentage points in the other three professional study programmes. In sum, Figure 3 indicates that academic results achieved in the first year of enrolment are better indicators of graduation

<sup>10</sup> Careful examination of all values for predicted graduation probabilities per GPA decile disclosed that minority-majority gaps for immigrants and descendants, as well as gaps between immigrants and descendants, gradually decrease for each higher GPA decile in all four professional study programmes.



**Fig. 3** Estimated graduation probabilities\* within five/six years from enrolment, by professional study programme, immigrant status, and level of GPAs attained in the first academic year ( $N=149,869$ ). Notes: \*The probabilities were estimated as AME with 95% confidence intervals from regression coefficients in the adjusted model in Appendix 2 (Table 3). Estimates are not plotted for students whose GPAs were not registered ( $N=39,029$ ).

probabilities for students with an immigrant background, compared with native majority students, although they are generally less likely to complete a degree in all four study programmes. However, it is also important to keep in mind that the students with an immigrant background, on average, achieved lower GPAs than the native majority students.

### Discussion and conclusions

This article has explored degree completion among students with a non-Western immigrant background who enrolled in professional bachelor’s degree programmes that educate future teachers in early childhood education or schools, nurses, or social workers. In Norway and other immigrant-dense European countries, ethnic minorities are currently under-represented in these professions, particularly among schoolteachers. Achieving ethnic diversity among highly qualified welfare professionals is an important

aspect of warranting adequate provision of public services for immigrant populations. Thus, it is important to ensure that those who enrol in study programmes qualifying for these professions complete their degrees. Besides, retaining students in these study programmes, regardless of their ethnicity, is critical to accommodate increasing demands for welfare professionals, particularly nurses (European Commission, 2020) and teachers (OECD, 2019).

As expected, the analysis uncovered that both immigrants and descendants are less likely than native majority students to complete a degree in professional study programmes in early childhood education, teaching, nursing, and social work. This is partly because, on average, they have higher transfer rates to alternative study programmes. However, they are also considerably more prone to drop out of HE altogether. These trends should be taken seriously and perhaps most of all for teacher education, in which graduation rates for students with an immigrant background are particularly low. This contributes to the under-representation of ethnic minority teachers. Moreover, graduation rates were equally low for immigrants and descendants, contrary to expected lower rates among the former due to that they presumably face greater linguistic and cultural challenges. Among nursing students, descendants even had a lower likelihood of degree completion than immigrants. In sum, the study programmes examined seem to face challenges in retaining students with an immigrant background until graduation. Future research should address the extent to which these challenges are linked to deficient integration of students with an immigrant background. As emphasised by Tinto (1993), social and academic integration are important aspects for students' sense of belonging in HE, motivation, and ability to stay enrolled. As discussed, some qualitative studies indicate that certain students with an immigrant background in welfare-oriented study programmes struggle to achieve satisfactory academic results and meet professional requirements, particularly in practice placements due to inadequate communication skills, experience social isolation, or face instances of discrimination (Flateland et al., 2019; Bernard et al., 2011; European Commission, 2016).

As a proxy for academic integration and ability, the analysis did demonstrate that GPA levels achieved in the first enrolment year are fairly good indicators of whether students with an immigrant background complete their professional degree. Among low-achievers, students with an immigrant background were considerably less likely to complete a degree in all four study programmes, compared with native majority students with similar low results. In contrast, minority-majority graduation gaps were substantially reduced among those who achieve well, except for moderate reductions among high-achieving student teachers. Thus, academically weak students with an immigrant background supposedly struggle with more complex challenges to stay enrolled until graduation. Unexpectedly, descendants with poor (first-year) GPAs were less likely to complete a degree than immigrants with similar GPAs. One may speculate whether low-performing students with an immigrant background initially have a weaker academic foundation to achieve well, or rather if poor academic results express their lack of sufficient academic integration to realise a future professional role. Presumably, there is some truth in both assumptions. Although GPA is not an exhaustive measure of students' academic integration, poor GPAs can certainly express dissatisfaction and lacking motivation to stay enrolled, as well as lacking academic skills. Anyhow, compared with low-achieving descendants, immigrants with poor first-year GPAs might initially be a more positively selected group of students who 'cling' to their chosen professional study programme despite extra challenges in achieving good

grades. In nursing education, immigrants are plausibly particularly selected as they are overall more likely to complete a degree than descendants. Nevertheless, future research should look closer into why descendants are the least likely to complete nursing education.

## Limitations

Despite the many advantages of analysing register data covering national student cohorts, thus enabling scrutiny of relatively small groups of students with an immigrant background in the study programmes examined, these data also present some limitations to the analyses in this article. First, these data do not provide access to students' subjective experiences important for study motivation, social and academic integration. Future surveys and qualitative studies on students with an immigrant background enrolled in professional study programmes in early childhood education, teaching, nursing, or social work should go more in-depth on factors that may be important to their success in completing a degree. Second, the analyses do not account for students' academic abilities prior to enrolling in the study programmes examined due to the large extent of non-registered GPA from upper secondary education in the data. Students' academic integration and ability to complete a degree probably vary according to their upper secondary GPA. Third, although the GPAs attained by students during their first year of enrolment in HE also capture such differences in abilities and academic integration, the analyses using this measure must be interpreted with some caution due that quite a few of the students examined have non-registered GPA from their respective study programmes. The association between first-year GPA and graduation probabilities must also not be interpreted causally as the analyses omit many factors that might be related to students' integration and motivation and thus affect both their academic results and probabilities of completing a degree.

## Policy implications

HE institutions and authorities should be aware of comparatively low graduation rates among students with an immigrant background in the welfare-oriented bachelor's degree programmes examined and thus attempt to map and remedy these students' challenges to stay enrolled. Students with an immigrant background enrolled in these study programmes apparently have other challenges which they must meet to succeed, compared with native majority students. To ensure greater success among these students, HE institutions could implement several measures to improve their social and academic integration. For instance, although many HE institutions try to integrate students by arranging social events and sponsor buddy schemes, such activities often involve alcohol which may not be appropriate for all cultures. Arranging more cultural-sensitive social events or creating smaller support groups of students would perhaps be better suited to integrating ethnic minority students. HE institutions could possibly also prepare students with an immigrant background better for cultural-sensitive encounters in the field of practice and organise targeted language courses. Having said this, it is also imperative to ensure that those who complete their degrees are recruited (and retained) in the respective professions to increase and maintain ethnic diversity within them.



## Appendix 1

**Table 2** Proportions of students with non-registered GPAs, by immigrant status, professional study programme, and study outcome

|                           | Native majority | Immigrants | Descendants |
|---------------------------|-----------------|------------|-------------|
| Early childhood education |                 |            |             |
| Non-completion            | 44.8            | 50.8       | 47.2        |
| Transfer                  | 74.5            | 70.8       | 71.2        |
| Graduation                | 20.9            | 15.0       | 6.9         |
| Teaching                  |                 |            |             |
| Non-completion            | 27.6            | 45.1       | 31.0        |
| Transfer                  | 49.9            | 55.8       | 52.4        |
| Graduation                | 9.9             | 15.8       | 2.8         |
| Nursing                   |                 |            |             |
| Non-completion            | 39.4            | 42.8       | 40.9        |
| Transfer                  | 59.2            | 58.5       | 54.4        |
| Graduation                | 7.9             | 6.2        | 1.6         |
| Social work               |                 |            |             |
| Non-completion            | 54.6            | 61.2       | 36.5        |
| Transfer                  | 73.0            | 71.6       | 67.7        |
| Graduation                | 17.2            | 13.3       | 2.3         |

The percentages were calculated for whether grades were registered for the students according to their immigrant status, professional study programmes, and study outcomes. For example, GPAs were not registered for 44.8 per cent of the native majority students with non-completion in early childhood education.

## Appendix 2

**Table 3** Average marginal effects of multinomial logistic regressions with predicted study outcomes within five years<sup>a</sup> from enrolment between 1990 and 2009 (N = 188,898)

|  | GRADUATION            |                 |                       |                 | TRANSFER             |                 |                       |                 | NON-COMPLETION        |                 |                       |                 |
|--|-----------------------|-----------------|-----------------------|-----------------|----------------------|-----------------|-----------------------|-----------------|-----------------------|-----------------|-----------------------|-----------------|
|  | Base model            |                 | Adjusted model        |                 | Base model           |                 | Adjusted model        |                 | Base model            |                 | Adjusted model        |                 |
|  | Coef. <sup>d</sup>    | SE <sup>e</sup> | Coef. <sup>d</sup>    | SE <sup>e</sup> | Coef. <sup>d</sup>   | SE <sup>e</sup> | Coef. <sup>d</sup>    | SE <sup>e</sup> | Coef. <sup>d</sup>    | SE <sup>e</sup> | Coef. <sup>d</sup>    | SE <sup>e</sup> |
| Immigrant status (ref. = Native majority) <sup>b</sup>         |                       |                 |                       |                 |                      |                 |                       |                 |                       |                 |                       |                 |
| Immigrants   | -0.147 <sup>***</sup> | (0.010)         | -0.075 <sup>***</sup> | (0.007)         | 0.058 <sup>***</sup> | (0.008)         | 0.025 <sup>***</sup>  | (0.006)         | 0.089 <sup>***</sup>  | (0.008)         | 0.050 <sup>***</sup>  | (0.007)         |
| Descendants  | -0.228 <sup>***</sup> | (0.020)         | -0.136 <sup>***</sup> | (0.015)         | 0.036 <sup>**</sup>  | (0.013)         | 0.002                 | (0.009)         | 0.193 <sup>***</sup>  | (0.020)         | 0.133 <sup>***</sup>  | (0.016)         |
| Professional study programmes<br>(ref. = Nursing) <sup>c</sup> |                       |                 |                       |                 |                      |                 |                       |                 |                       |                 |                       |                 |
| Early childhood education                                      | -0.099 <sup>***</sup> | (0.003)         | -0.032 <sup>***</sup> | (0.002)         | 0.021 <sup>***</sup> | (0.002)         | -0.017 <sup>***</sup> | (0.001)         | 0.078 <sup>***</sup>  | (0.002)         | 0.048 <sup>***</sup>  | (0.002)         |
| Early childhood educ. * immigrants                             | 0.023                 | (0.015)         | -0.006                | (0.014)         | 0.009                | (0.012)         | 0.029*                | (0.012)         | -0.031 <sup>***</sup> | (0.009)         | -0.024*               | (0.010)         |
| Early childhood educ. * descendants                            | 0.072 <sup>***</sup>  | (0.018)         | 0.031                 | (0.019)         | -0.001               | (0.015)         | 0.030                 | (0.017)         | -0.071 <sup>***</sup> | (0.010)         | -0.061 <sup>***</sup> | (0.011)         |
| Teaching   | -0.166 <sup>***</sup> | (0.003)         | -0.153 <sup>***</sup> | (0.003)         | 0.085 <sup>***</sup> | (0.002)         | 0.077 <sup>***</sup>  | (0.002)         | 0.081 <sup>***</sup>  | (0.002)         | 0.076 <sup>***</sup>  | (0.002)         |
| Teaching * immigrants  | 0.007                 | (0.018)         | 0.017                 | (0.016)         | 0.009                | (0.012)         | -0.003                | (0.010)         | -0.016                | (0.012)         | -0.014                | (0.012)         |
| Teaching * descendants   | 0.065 <sup>**</sup>   | (0.021)         | 0.045*                | (0.019)         | -0.007               | (0.014)         | 0.005                 | (0.014)         | -0.058 <sup>***</sup> | (0.014)         | -0.050 <sup>***</sup> | (0.014)         |
| Social work  | -0.015 <sup>***</sup> | (0.002)         | 0.023 <sup>***</sup>  | (0.002)         | 0.017 <sup>***</sup> | (0.002)         | -0.002                | (0.002)         | -0.003                | (0.002)         | -0.020 <sup>***</sup> | (0.002)         |
| Social work * immigrants                                       | 0.041 <sup>**</sup>   | (0.013)         | 0.024*                | (0.011)         | -0.009               | (0.009)         | -0.000                | (0.009)         | -0.032 <sup>***</sup> | (0.009)         | -0.024*               | (0.009)         |
| Social work * descendants                                      | 0.075 <sup>***</sup>  | (0.017)         | 0.029                 | (0.016)         | -0.013               | (0.012)         | -0.018                | (0.014)         | -0.063 <sup>***</sup> | (0.012)         | -0.047 <sup>***</sup> | (0.013)         |
| First year GPA (ref = Decile 1)                                |                       |                 |                       |                 |                      |                 |                       |                 |                       |                 |                       |                 |
| Decile 2   | -                     |                 | 0.066 <sup>***</sup>  | (0.005)         | -                    |                 | -0.022 <sup>***</sup> | (0.003)         | -                     |                 | -0.045 <sup>***</sup> | (0.004)         |
| Decile 3   | -                     |                 | 0.108 <sup>***</sup>  | (0.004)         | -                    |                 | -0.032 <sup>***</sup> | (0.003)         | -                     |                 | -0.076 <sup>***</sup> | (0.004)         |
| Decile 4   | -                     |                 | 0.133 <sup>***</sup>  | (0.004)         | -                    |                 | -0.038 <sup>***</sup> | (0.002)         | -                     |                 | -0.094 <sup>***</sup> | (0.004)         |
| Decile 5   | -                     |                 | 0.138 <sup>***</sup>  | (0.004)         | -                    |                 | -0.035 <sup>***</sup> | (0.003)         | -                     |                 | -0.103 <sup>***</sup> | (0.004)         |
| Decile 6   | -                     |                 | 0.140 <sup>***</sup>  | (0.004)         | -                    |                 | -0.036 <sup>***</sup> | (0.003)         | -                     |                 | -0.103 <sup>***</sup> | (0.004)         |
| Decile 7   | -                     |                 | 0.158 <sup>***</sup>  | (0.004)         | -                    |                 | -0.039 <sup>***</sup> | (0.003)         | -                     |                 | -0.119 <sup>***</sup> | (0.004)         |

**Table 3** (continued)

|  | GRADUATION         |                    |                 | TRANSFER           |                    |                 | NON-COMPLETION     |                    |                 |
|--|--------------------|--------------------|-----------------|--------------------|--------------------|-----------------|--------------------|--------------------|-----------------|
|  | Base model         | Adjusted model     | SE <sup>c</sup> | Base model         | Adjusted model     | SE <sup>c</sup> | Base model         | Adjusted model     | SE <sup>c</sup> |
|  | Coef. <sup>d</sup> | Coef. <sup>d</sup> | SE <sup>c</sup> | Coef. <sup>d</sup> | Coef. <sup>d</sup> | SE <sup>c</sup> | Coef. <sup>d</sup> | Coef. <sup>d</sup> | SE <sup>c</sup> |
| Decile 8   | -                  | 0.170***           | (0.004)         | -                  | -0.043***          | (0.002)         | -                  | -0.126***          | (0.004)         |
| Decile 9   | -                  | 0.177***           | (0.004)         | -                  | -0.038***          | (0.003)         | -                  | -0.139***          | (0.004)         |
| Decile 10  | -                  | 0.183***           | (0.004)         | -                  | -0.040***          | (0.003)         | -                  | -0.143***          | (0.004)         |
| No GPA registered  | -                  | -0.331***          | (0.004)         | -                  | 0.249***           | (0.003)         | -                  | 0.082***           | (0.004)         |
| Controls for students' sex, age and year of enrollment, and previous HE experience | Yes                | Yes                | Yes             | Yes                | Yes                | Yes             | Yes                | Yes                | Yes             |
| Number of observations   | 188,898            | 188,898            | 188,898         | 188,898            | 188,898            | 188,898         | 188,898            | 188,898            | 188,898         |
| McFadden's Pseudo R <sup>2</sup>   | 0.0601             | 0.1942             | 0.0601          | 0.0601             | 0.1942             | 0.0601          | 0.0601             | 0.1942             | 0.0601          |
| Log pseudolikelihood   | -122,070.79        | -104,655.81        | -122,070.79     | -122,070.79        | -104,655.81        | -122,070.79     | -122,070.79        | -104,655.81        | -122,070.79     |

<sup>a</sup> Study outcomes were measured within six years from enrolment for teacher education students who had enrolled in four-year study programmes. <sup>b</sup> Coefficients for immigrant status apply to immigrants and descendants in nursing (ref. = Native majority students in nursing). <sup>c</sup> Main coefficients for professional study programmes apply to native majority students (ref. = Native majority students in nursing), while interactions with immigrant status apply to immigrants and descendants in these study programmes. <sup>d</sup> Significance levels: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . <sup>e</sup> Clustered standard errors.

**Funding** Open Access funding provided by Oslo Metropolitan University. This work was supported by the Norwegian Research Council, grant 283556.

## Declarations

**Conflict of interest** The author confirms that there is no conflict of interest.

**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

## References

- Allison, P. D. (2002). Missing data. *Sage*. <https://doi.org/10.4135/9781412985079>
- Andresen, S. M. H., & Lervåg, M.-L. (2022). Frafall i universitets- og høyskoleutdanning [Dropout in university and university college education]. In *Reports 2022/6*. Oslo/Kongsvinger: Statistics Norway.
- Askvik, T. (2019). *Utdanning er utdanning? : underrepresenterte grupper i høyere utdanning og valg knyttet til fagfelt [Education is education? : under-represented groups in higher education and choices related to educational fields]*. (Doctoral Thesis). Centre for the Study of Professions, Oslo Metropolitan University, Oslo.
- Behr, A., Giese, M., Tegum Kamdjou, H. D., & Theune, K. (2020). Dropping out of university: A literature review. *Review of Education*, 8(2), 614–652. <https://doi.org/10.1002/rev3.3202>
- Bernard, C., Fairlough, A., Fletcher, J., & Ahmet, A. (2011). *Diversity and Progression among Social Work Students in England*. Retrieved from [https://research.gold.ac.uk/id/eprint/6326/2/DH\\_Final\\_Report\\_18\\_July\\_2011.pdf](https://research.gold.ac.uk/id/eprint/6326/2/DH_Final_Report_18_July_2011.pdf)
- Braxton, J. M. (2016). *Reworking the student departure puzzle*. Nashville: Vanderbilt University Press. <https://doi.org/10.2307/j.ctv176kvf4>
- Brochmann, G., & Kjeldstadli, K. (2008). *A history of immigration : the case of Norway 900-2000*. Oslo: Universitetsforlaget
- Drange, I., & Helland, H. (2017). Studenter med innvandringsbakgrunn i profesjonsutdanningene – rekruttering og arbeidsmarkedskarriere [Students with an immigrant background in the professional education – recruitment and labor market careers]. In S. Mausethagen & J.-C. Smeby (Eds.), *Kvalifisering til profesjonell yrkesutøvelse [Qualification for professional practice]*. Oslo: Universitetsforlaget.
- Equality Act 2010. (2010). Legislation.gov.uk. 2010. Retrieved from <https://www.legislation.gov.uk/ukpga/2010/15/contents>
- European Commission. (2016). *Study on the diversity within the teaching profession with particular focus on migrant and/or minority background*. Luxembourg: Publications Office of the European Union. <https://doi.org/10.2766/873440n>
- European Commission. (2020). *Analysis of shortage and surplus occupations 2020*. Luxembourg: Publication Office of the European Union. <https://doi.org/10.2767/933528>
- Flateland, S. M., Pryce-Miller, M., Skisland, A.V.-S., Tønsberg, A. F., & Söderhamn, U. (2019). Exploring the experiences of being an ethnic minority student within undergraduate nurse education: A qualitative study. *BMC Nursing*, 18(1), 63–63. <https://doi.org/10.1186/s12912-019-0389-0>
- Guiffrida, D. A. (2006). Toward a cultural advancement of Tinto's theory. *Review of Higher Education*, 29(4), 451–472. <https://doi.org/10.1353/rhe.2006.0031>
- Helgeland, K. (2008). *Should I stay or should I go? : en kvantitativ studie av forskjeller i frafall fra høyskolene etter innvandrerbakgrunn [Should I stay or should I go? : a quantitative study of differences in dropout from university colleges by immigrant background]*. (Master's Thesis). Institute of Sociology and Social Geography, Faculty of Social Sciences, University of Oslo.
- Helland, H., & Hovdhaugen, E. (2021). Degree completion in short professional courses: Does family background matter? *Journal of Further and Higher Education*, 46(5), 680–694. <https://doi.org/10.1080/0309877X.2021.1998394>

- Helland, H., & Ljunggren, J. (2021). Arbeidere og yrkesstatus i Likhets-Norge [Workers and occupational status in egalitarian Norway]. In M. N. Hansen & J. Ljunggren (Eds.), *Arbeiderklassen [The working class]*. Oslo: Cappelen Damm akademisk.
- Hermansen, A. S. (2016). Moving Up or Falling Behind? Intergenerational Socioeconomic Transmission among Children of Immigrants in Norway. *European Sociological Review*, 32(5), 675–689. <https://doi.org/10.1093/esr/fjcw024>
- House of Commons Library. (2020). *Ethnic diversity in politics and public life*. Briefing paper CBP 01156. London. Retrieved from <https://researchbriefings.files.parliament.uk/documents/SN01156/SN01156.pdf>
- Howard, J. (2010). The Value of Ethnic Diversity in the Teaching Profession: A New Zealand Case Study. *International Journal of Education*, 2(1). <https://doi.org/10.5296/ije.v2i1.377>
- Johannessen, B., Flateland, S., Haraldstad, K., Skisland, A., & Rohde, G. (2022). Being an ethnic minority nursing student – A meta synthesis. *Journal of Professional Nursing*, 40, 111–121. <https://doi.org/10.1016/j.profnurs.2022.03.011>
- Jones, M. P. (1996). *Indicator and Stratification Methods for Missing Explanatory Variables in Multiple Linear Regression*. *Journal of the American Statistical Association*, 433(91), 222–230. <https://doi.org/10.2307/2291399>
- Ma, Y. (2009). Family Socioeconomic Status, Parental Involvement, and College Major Choices – Gender, Race-Ethnic, and Nativity Patterns. *Sociological Perspectives*, 52(2), 211–234. <https://doi.org/10.1525/sop.2009.52.2.211>
- Mattila, L.-R., Pitkälä, M., & Eriksson, E. (2010). International student nurses' experiences of clinical practice in the Finnish health care system. *Nurse Education in Practice*, 10(3), 153–157. <https://doi.org/10.1016/j.nepr.2009.05.009>
- Maurud, S., Børøsd, E., & Moen, A. (2022). Gender and ethnicity's influence on first-year nursing students' educational motivation and career expectations: A cross-sectional study. *Nursing Open*, 9(3), 1667–1678. <https://doi.org/10.1002/nop2.1191>
- Mood, C. (2010). Logistic Regression: Why We Cannot Do What We Think We Can Do, and What We Can Do About It. *European Sociological Review*, 26(1), 67–82. <https://doi.org/10.1093/esr/fjcp006>
- Nordfjell, O. B., & Nielsen, S. B. (2019). *Men in Nursing Education: Mapping Educational Practices and Student Experiences in Iceland, Denmark, and Norway*. Akureyri/Roskilde/Oslo: University of Akureyri/Directorate of Equality Iceland/Roskilde University/Reform Resource Centre for Men Norwegian Ministries. (2020). *Immigration and Integration 2018-2019 : Report for Norway to the OECD*. Oslo: Norwegian Ministries
- OECD. (2019). Education at a glance 2019: OECD indicators. Paris: Paris: OECD. <https://doi.org/10.1787/f8d7880d-en>
- Saha, S., & Shipman, S. A. (2006). *The Rationale for Diversity in the Health Professions : A Review of the Evidence*. Washington/Rochville: U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions.
- Severiens, S., & Wolff, R. (2008). A comparison of ethnic minority and majority students: Social and academic integration, and quality of learning. *Studies in Higher Education*, 33(3), 253–266. <https://doi.org/10.1080/03075070802049194>
- Skisland, A.V.-S., Flateland, S. M., Tønnsberg, A. K. F., & Söderhamn, U. (2018). Practice supervision of minority language nursing students requires more time and adaptation. *Sykepleien Forskning*. <https://doi.org/10.4220/Sykepleienf.2018.73021en>
- Statistics Norway. (2022a, 21 June 2022a). Employees in kindergartens and schools. Retrieved from <https://www.ssb.no/en/utdanning/barnehager/statistikk/ansatte-i-barnehage-og-skole>
- Statistics Norway. (2022b, 31 March 2022b). Students in higher education. Retrieved from <https://www.ssb.no/en/utdanning/hoyere-utdanning/statistikk/studenter-i-universitets-og-hogskoleutdanning>
- Statistics Norway. (2022c, 7 March 2022c). Immigrants and Norwegian-born to immigrant parents per 1 January 2022c. Retrieved from <https://www.ssb.no/en/befolkning/innvandrere/statistikk/innvandrere-og-norskfodte-med-innvandrerforeldre>
- Statistics Norway. (2022d, 3 March 2022d). Employment among immigrants, register-based. Retrieved from <https://www.ssb.no/en/arbeid-og-lonn/sysselsetting/statistikk/sysselsetting-blant-innvandrere-registerbasert>
- Statistics Sweden. (2022). Employees 16–64 years at national level by occupation (3-digit SSSYK 2012), region of birth and sex. Year 2019–2020. Retrieved from [https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START\\_\\_AM\\_\\_AM0208\\_\\_AM0208B/YREG65N/](https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START__AM__AM0208__AM0208B/YREG65N/)
- Steinkellner, A. (2017). Hvordan går det med innvandrere og deres barn i skolen? [How are immigrants and their children doing in school?]. In T. Sandnes (Ed.), *Innvandrere i Norge 2017 [Immigrants in Norway 2017]*. Oslo/Kongsvinger: Statistics Norway.

- Støren, L. A. (2011). Pursuing educational ambitions? Higher education enrolment and the choice of study programmes among immigrant and non-immigrant youth in Norway. *Irish Educational Studies*, 30(2), 159–177. <https://doi.org/10.1080/03323315.2011.569138>
- Tinto, V. (1993). *Leaving College: Rethinking the Causes and Cures of Student Attrition* (2nd ed.). Chicago: University of Chicago Press
- Vrålstad, S., & Wiggen, K. S. (2017). Levekår blant innvandrere i Norge 2016 [Living conditions among immigrants in Norway 2016]. In *Reports 2017/13*. Oslo/Kongsvinger: Statistics Norway.

**Publisher's note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.