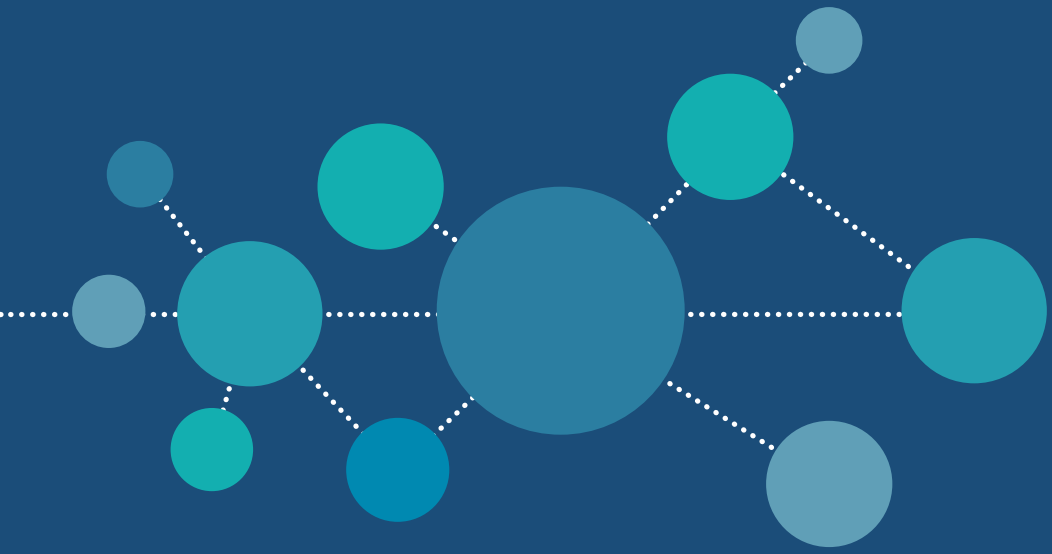
EUROSTUDENT VII

What determines students' social integration in higher education?

THEMATIC REVIEW • 2021



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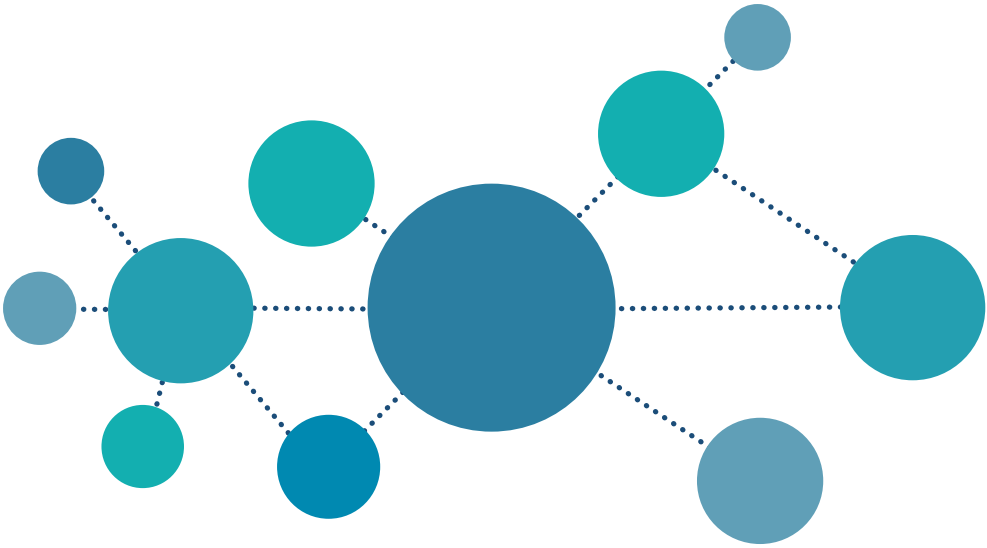

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1 Background

An inclusive environment in higher education that fosters equity and diversity is a stated goal of European higher education policy (Annex II to the Rome Communiqué, 2020; European Commission, 2020). Nevertheless, data from the EUROSTUDENT SURVEYS (Hauschildt et al., 2021; DZHW, 2018; Hauschildt et al., 2015) have repeatedly shown that students' study and living conditions are greatly shaped by their parents' educational and financial background. Students whose parents have not attained a tertiary degree are underrepresented in most EUROSTUDENT countries, and their parents are financially less well-off than those of students with parents with a tertiary degree. Students' financial difficulties have been shown to be clearly related to their parents' financial status. Students whose parents have not attained a tertiary degree tend to enter into higher education (HE) later and do so more often using alternative access routes. Non-universities and short-cycle and Bachelor's (vs. Master's) programmes register higher proportions of these students. Working alongside studies is more common for 'first-generation' students. They rely on their family to finance their studies less often.

Besides objective differences in students' study and living conditions, increasingly, the individual student's subjective experience has attracted the interest of researchers. Particularly, but not exclusively in fee-funded systems, students' assessments of their learning experiences and environment play an important role in quality assurance and serve to provide feedback to institutions (Klemenčič & Chirikov, 2015). Gaining insight into students' perceptions has also been highlighted as important for understanding their study-related decisions and behaviour, e.g. persistence (Tinto, 2017). Due to the key role student experiences are thought to play in linking the institutional environment and student outcomes, understanding students' perceptions of their study environment can help identify potentially at-risk groups and help to develop measures to support students who are less satisfied with their study experiences.

A key element of the student experience with particular relevance for the social dimension of higher education is students' social integration, which refers to the extent of interactions students have with other relevant actors in the higher education

system (fellow students and lecturers)[1]. How students in higher education interact with the institution's social and academic system is influenced by a range of background characteristics and goal commitments (Pascarella & Terenzin, 1980). Students who do not have a higher education background can struggle to integrate into the unknown culture and practices within higher education (Bourdieu, 1984; Holmegaard, Madsen, & Ulriksen, 2017). Research shows that students from better educated families have chances of tertiary degrees themselves (Bar Haim & Shavit, 2013; OECD, 2018; Vossensteyn et al., 2015) and that familial financial status strongly influences educational attainment across generations (Pfeffer, 2018; Stuhler & Biagi, 2018; Wightman & Danziger, 2014). Not having to work besides studies can increase the time spent on studies (Masevičiūtė et al., 2018), which may also influence social integration. The social integration of students and their sense of belonging in higher education varies due to actual differences in the learning environment, such as type of housing (Riker & Decoster, 2008; Schudde, 2011), but has also been shown to vary according to student characteristics, as impairments (Hauschildt et al., 2020), parental education (Gillen-O'Neel, 2019), minority status (Fan et al., 2021; Johnson et al., 2007) and socio-economic status (Ahn & Davis, 2020). Studies have shown that students with higher degrees of social integration are more motivated and display higher persistence (Garza et al., 2021; Hausmann et al., 2007; Noyens et al., 2019; Snyder, 2017; Tinto, 2017).

Building on these findings, a closer look is taken within this review on how specific social background characteristics (i.e. parental and educational background), financial study resources, work and study experiences (i.e. time spent on work and studies) are related to the social integration of students from different countries. This review aims, firstly, to provide a comparative overview of students' social integration related to both fellow students and lecturers. Descriptive statistics for different groups of students (by demographic characteristics, social background, living conditions and study situation) allow for the analysis of common cross-country patterns and highlight which student groups may face particular challenges. Secondly, multivariate analyses are used to identify the most relevant factors that contribute to high or low levels of students' social integration by analysing and controlling for several variables at once, including socio-demographic characteristics of students, aspects of their living and study

1. This definition is based on Dahm et al. (2016); as Wol-Wendel, Ward, and Kinzie (2009) note, integration is used by different scholars to mean different things.

situation, as well as indicators relating to their current study situations. The research questions are therefore:

1. **Which factors contribute to students' social integration at higher education institutions?**
2. **How do they vary across countries?**

The conceptual approach used for analysis in this paper partly draws upon Tinto's (1975) theoretical explanations of dropout behaviour of students within higher education, as well as its operationalisation by Dahm et al. (2016). Tinto views university as a social system that has its own values and social structures, which students need to go along with to avoid dropping out. He distinguishes between academic integration and social integration. While the first can be measured in grades and intellectual development, the latter is defined as "the interaction between the individual with given sets of characteristics (backgrounds, values, commitments, etc.) and other persons of varying characteristics within the higher education institution" (p. 107). Social integration thus not only involves peers, but also the faculty and administrative personnel of the higher education institution. Although social and academic integration are usually related (e.g. exchange with peers leading to better grades), it is possible to achieve integration in only one of the two areas.

This thematic review contributes to the understanding of a key element of the student experience in higher education – social integration – and, due to the large number of countries covered from a comparative perspective, provides insights into country-specific patterns, thus laying the groundwork for further research and policy development. Through the simultaneous analysis of several potentially relevant factors, the results allow for a differentiated and comprehensive understanding of the factors relevant to students' social integration.

2

Data and operationalisation

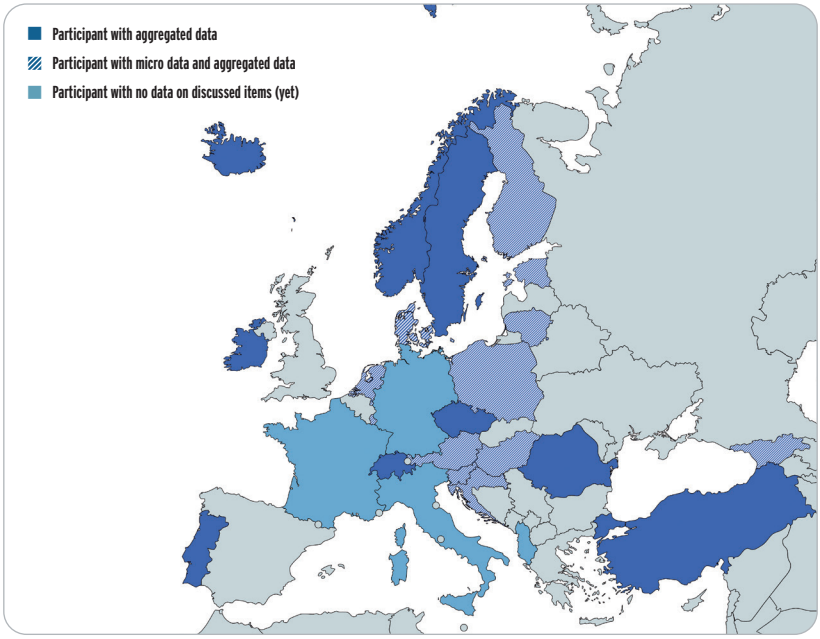
EUROSTUDENT data

We examine our research questions with cross-national data from the EUROSTUDENT VII project. EUROSTUDENT provides information based on student surveys on the social and economic conditions of student life in Europe. It holds important indicators on the current state of the social dimension in many European countries. A variety of topics on current study life are covered: (1) students' background (demographic characteristics and social background), (2) study conditions and experiences (access to and transition within HE, study conditions and quality, time budget and mobility), and (3) students' living conditions (employment, resources, expenses and housing situation). The data from EUROSTUDENT VII provide comprehensive information to describe, explain and assess the state of the social dimension in the European higher Education Area (EHEA).

EUROSTUDENT topics

- **Socio-economic background of students**
- **Transition into and within higher education**
- **Types and modes of study**
- **Students' time budget**
- **Students' employment and internships**
- **Students' resources**
- **Students' expenses**
- **Housing situation**
- **Students' international mobility**

For the current round (VII), 26 countries in the EHEA collected data between 2019 and 2021.



EUROSTUDENT's target group includes all students who, at the time of observation, are enrolled in any national study programme regarded as higher education in a country. Generally, this corresponds to ISCED (2011) levels 5, 6 and 7. Short descriptions of the aggregated data and micro data are provided in the following sections.

Aggregated EUROSTUDENT VII data

In the EUROSTUDENT project, all participating countries provide data on the aforementioned topics in aggregated form for public usage. For the descriptive analyses within this review, data is used from all EUROSTUDENT VII countries that provided data (and enough cases) on the relevant aspects (before July 2021): Austria, Czech Republic, Denmark, Estonia, Finland, Georgia, Croatia, Hungary, Ireland, Iceland, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland, Slovenia and Turkey. One needs to be aware that data from several countries may have been affected by the effects of the COVID-19 pandemic. Portugal, Romania and Turkey collected data in 2020 and 2021 (reference period during COVID-19 pandemic).

Micro data EUROSTUDENT VII

A major innovation in EUROSTUDENT VII is the collection of cross-national microdata, which allows in-depth multivariate analyses on a variety of topics on the social dimension of European higher education. For the micro data analyses, we make use of the Eurostudent VII Scientific Use File (Cuppen et al., 2021). At the point of writing, 13 out of 26 participating countries have completed their micro data preparation, and more countries are following. The following countries are included in our multivariate analyses on the micro data: Austria, Croatia, Denmark, Estonia, Finland, Georgia, Hungary, Ireland, Lithuania, Luxembourg, Netherlands, Poland and Slovenia. Fieldwork was completed in these countries in 2019. The dataset comprises 134,255 respondents.

Operationalisation

To measure both dimensions of social integration, four items were used within the questionnaire of the EUROSTUDENT project. In line with Tinto's theory (1975), the first two items focus on students' interactions with their peers, while the others on how well they are integrated concerning lecturers. The items we used are adopted from the NEPS study (Dahm et al., 2016). Regarding fellow students, students were asked to indicate to what extent they agree with the following statements (five-point Likert Scale with the higher the score, the more the student agrees with the statement):

"I know a lot of fellow students with whom I can discuss subject-related questions"

"I have contact with many students in my current study programme"

The average of these two items was taken to construct a measure for social integration related to fellow students (Cronbach's alpha of 0.82). Regarding lecturers, the students were presented the following statements:

"I get along well with lecturers in my current study programme"

"Lecturers are interested in what I have to say"

Again, the scores on the two items were averaged (Cronbach's alpha of 0.77). Higher scores indicate a stronger sense of social integration with lecturers or fellow students. Whether and to what extent different factors relate to students' social integration, and whether these relationships vary across countries is examined with the micro data.

Of main interest is the relation between parental educational background, parental financial situation (i.e. parental socio-economic background), time spent on work and study intensity with a student's level of social integration with (fellow) students and lecturers. *Parental educational background* was measured as the highest educational attainment of one of the parents and was coded into three categories: 'Low' (ISCED 0-2), 'Medium' (ISCED 3-5) and 'High' (ISCED 6-8). *Parental financial situation* was measured with the following question which originates from the PIRLS survey (2006): "How well-off financially do you think are your parents (or guardians) compared with other families?". The answers were recoded into three categories: "Not very or not at all well-off", "Averagely well-off" and "Somewhat or very well-off". *Time spent on work* was measured by asking students how many hours they spend on their paid job(s) during a typical week in their lecture period. The answers in hours were recoded into the following three categories: "Low" (0 hours), "Medium" (1–20 hours) and "High" (> 20 hours). *Study intensity* was measured in weekly hours spent on taught studies/ lectures, personal study time and study related activities. It was then recoded into three categories: "Low intensity" (0–20 hours), "Medium intensity" (> 20–40 hours) and "High intensity" (> 40 hours).

For the analyses, we also included the following control variables: gender, age, migration background, delayed transition into HE, the type of higher education, being a first-year student, students' living situation, financial dependency and field of study. *Gender* was coded (0) for males and (1) for females. Age was measured in four categories: "up to 21 years", "22 to < 25 years", "25 to < 30 years" and "30 years or over". *Migration background* indicates whether at least one of the parents was born abroad. *Delayed transition* into HE indicates whether students went into higher education within two years after leaving school (0), or with a delay of more than two years (1). *HEI type* measured whether students attended a university (0) or a non-university type (e.g. a university of applied sciences) (1). *First-year student* indicated whether the respondent was a first-year student (1) or not (0) at the time of the survey. *Students' living situation* was divided into three categories: "Living with parents", "Living away from parents (but not in a student residence)" and "Living in a student residence". *Financial dependency* indicated whether students were more than 50% dependent on: self-earned income (i.e. themselves), family or other financial sources of income[2]. *Field of study* included the following ten categories: "Education", "Arts and humanities", "Social Sciences, journalism and information", "Business, administration and law", "Natural sciences, mathematics and statistics", "ICTs", "Engineering,

manufacturing and construction", "Agriculture, forestry, fisheries and veterinary", "Health and welfare" and "Services". For the sake of a better readability of the models and figures, some variable names are shortened in the sections below.

2. 'Other financial sources of income' include financial support from the (non-)university, support from another country (e.g. grants, scholarships, loans), savings used for living/studying during the current lecture period, other income from public sources (e.g. housing benefits, child benefits), repayable income from private sources (e.g. loans) or non-repayable income from private sources (e.g. alimony, property, income from capital, private scholarships).

3

Descriptive findings

To get a first impression of students' level of social integration in the different EUROSTUDENT countries, the countries' aggregated data is compared along the four different integration items (Figure 1). While, on average (light grey), all four items ranked rather high with values of about 4, taking a closer look, one can see slight differences between the four items and between the countries.

The Czech Republic, Croatia and Sweden are the countries where students most often know fellow students to discuss subject-related questions (all scores of 4.0) while Georgia ranks lowest, together with Portugal (both 3.5). When it comes to contact with peers, the Czech Republic, Ireland and Sweden (all 3.9) score the highest and Portugal (3.3), Austria and Finland (both 3.4), the lowest.

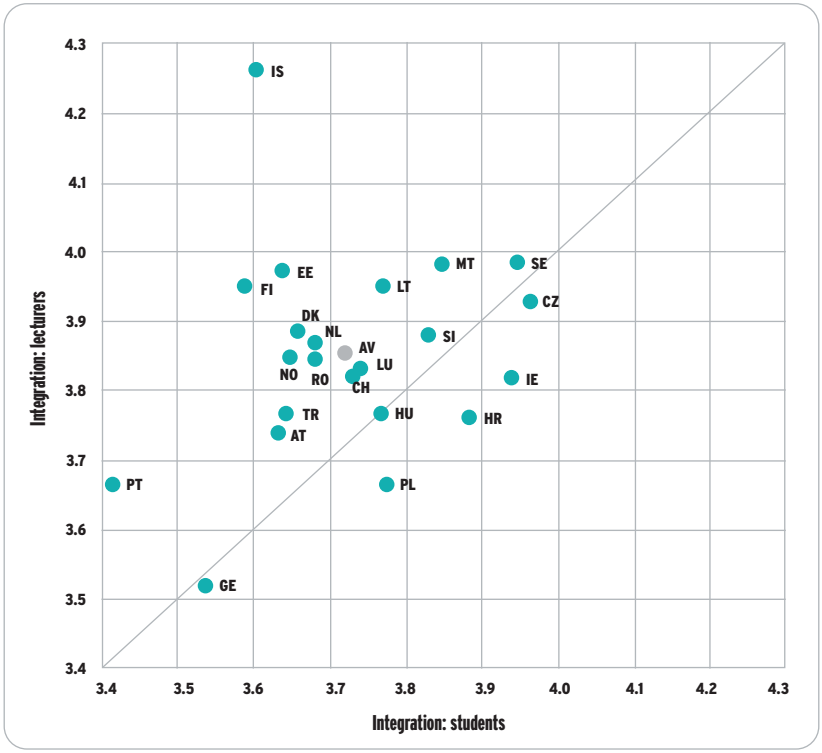
"Getting along well with lecturers" is the item that scored the highest amongst all students. Especially in the Czech Republic, Iceland (both 4.4) and Lithuania (4.3), students seem to get along especially well with their teaching staff, while in Georgia (3.5) this seems to be the case less often. When it comes to the question of whether lecturers are interested in what students have to say, slightly fewer students agree overall. Comparing the two items on lecturers, one can see that for students of all countries, getting along with their lecturers does not automatically mean feeling heard by them. Especially in the Czech Republic and Lithuania, the differences between the two items on lecturers are striking. Icelandic students are again those who rate the item relatively high (4.3), and Georgian (3.5) and Polish students (3.4) rather low.

FIGURE 1 | COUNTRY COMPARISON: FOUR ITEMS OF SOCIAL INTEGRATION

[*Source:* EUROSTUDENT VII Aggregated Data (2021)]

Figure 2 shows the relationship between the two different aspects of social integration concerning: a) students' peers (x-axis), and b) lecturers (y-axis). Students in most of the countries rate integration with their lecturers higher than with their peers (countries above the line), particularly those in Iceland. The opposite only holds true for Poland, Croatia, Ireland, the Czech Republic and Georgia.

FIGURE 2 | SOCIAL INTEGRATION CONCERNING LECTURERS & STUDENTS



[*Source:* EUROSTUDENT VII Aggregated Data (2021)]

Differences in social integration between student groups

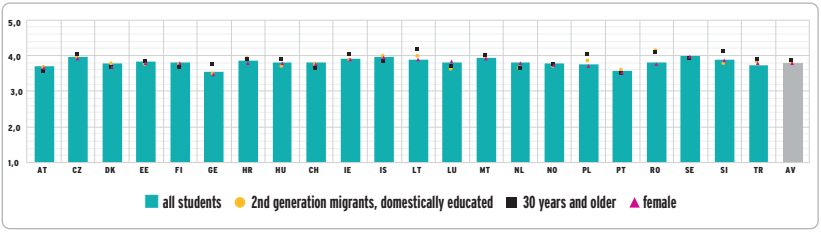
Differences in social integration between different student groups are investigated by analysing an index of all four social integration items.

Demographic background

Second generation migrants who were domestically educated are, in general, neither better nor worse integrated than the average; the same holds true for older students and female students (all 3.8). However, looking at the different countries, one can see that second generation migrants in Romania who were domestically educated are a bit better integrated than the national average, while the opposite is true in Luxembourg. In Georgia, Ireland, Lithuania, Poland, Romania, Slovenia and Turkey, older students

are better integrated than others. In the other countries, this group rates just slightly above or below the average of other students there. There seem to be no differences in social integration regarding gender in the individual countries.

FIGURE 3 | SOCIAL INTEGRATION OF DIFFERENT GROUPS: DEMOGRAPHIC BACKGROUND



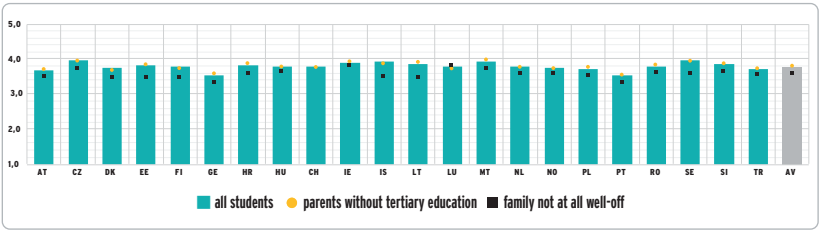
[*Source:* EUROSTUDENT VII Aggregated Data (2021)]

Note: No data available for SE: 2nd generation migrants, domestically educated.

Social background

Students whose parents did not attain tertiary education do not differ drastically in terms of their social integration in higher education. However, when it comes to their financial background, students coming from families that are not at all well-off are, in general, slightly less well integrated.

FIGURE 4 | SOCIAL INTEGRATION OF DIFFERENT GROUPS: SOCIAL BACKGROUND



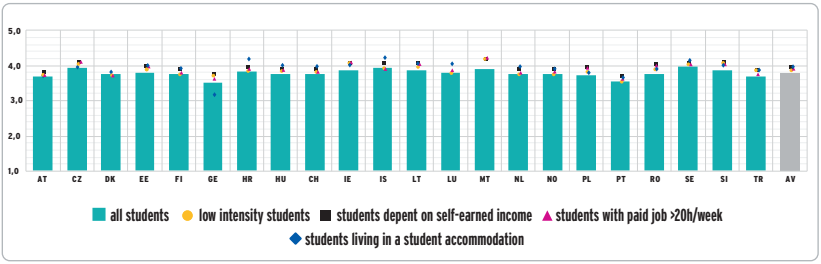
[*Source:* EUROSTUDENT VII Aggregated Data (2021)]

Note: No data available for CH: not at all well-off.

Living conditions

Students with low study intensity are overall slightly less integrated than their peers. Neither working more than 20 hours a week nor being dependent on self-earned income makes a big difference for students' integration in any of the countries. Only those living in student accommodation in Georgia are less socially integrated.

FIGURE 5 | SOCIAL INTEGRATION OF DIFFERENT GROUPS: LIVING CONDITIONS



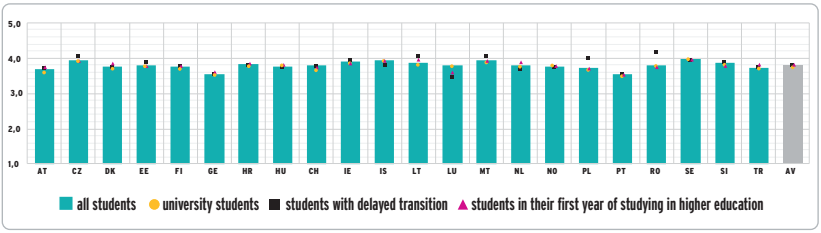
[*Source:* EUROSTUDENT VII Aggregated Data (2021)]

Note: No data available for LU & DK: students dependent on self-earned income; MT: students living in student accommodation.

Study conditions

Overall, students from universities who start studying at university later and those in their first year do not differ to their peers in terms of their social integration. However, taking a closer look at the countries' individual scores, one can see that in Luxembourg, students with delayed transition to higher education are less socially integrated than the country's average, while the opposite is the case in Poland and Romania.

FIGURE 6 | SOCIAL INTEGRATION OF DIFFERENT GROUPS: STUDY CONDITIONS



[*Source:* EUROSTUDENT VII Aggregated Data (2021)]

4

Multivariate results

In order to answer our research questions, we conduct multivariate multilevel models on the micro data from EUROSTUDENT VII. More specifically, we examine the role of the parental educational background, parental financial situation, time spent on work and study intensity in students' level of social integration with (fellow) students and lecturers. In addition, we are also interested in the extent to which these relationships may differ across countries.

Students' level of social integration is examined with regards to their fellow students on the one hand, and their lecturers on the other hand. As is shown in Chapter 3, the majority of students (across all countries) feel well socially integrated with fellow students and lecturers. As a result, the distribution of the two measurements is highly skewed. We therefore turn to logistic two-level multilevel models, where individuals (level 1) are nested within countries (level 2). In these models, we accounted for the influence of gender, age, migration background, delayed transition into HE, the type of higher education, being a first-year student, students' living situation, financial dependency and field of study. After we excluded missing values for all variables through listwise deletion, the sample of the micro data was reduced to 124,695 respondents across 13 countries.

General findings

First, we are interested in the extent to which students' level of social integration varies between countries. The extent to which students' level of social integration (regarding both teachers and students) is explained by differences between countries, is very low: around 1%[3]. In other words, the level of social integration does not seem to differ that much between countries. However, countries can still show different patterns in, for instance, the role of parental educational background and parental financial situation in the level of social integration with fellow students and lecturers.

3. $ICC_{students}$ = 0.7%; $ICC_{lecturers}$ = 1.2% ($N_{countries}$=13; $N_{individuals}$=124,695).

In order to examine possible different patterns in these relations across countries, we thus ran multivariate logistic models. First, we show the general findings (or the average relationships) across all 13 countries. In the next section, we present the findings per country (i.e. country-specific findings).

Social integration with fellow students

Figure 7 illustrates the findings of the full model on social integration with fellow students, including all independent variables (for an overview of the models, see Table 1 in the Appendix). Each Exp(B) of the model is depicted by a separate bar. Positive statistical effects are shown as green bars, whereas negative effects are shown as red bars. Note that only dark-coloured bars indicate significant effects ($p < 0.05$), while light-coloured bars indicate non-significant effects.

Starting off with parental educational background, Figure 7 demonstrates that there is no significant relation between parents' educational attainment and students' level of social integration with their fellow students when controlling for other factors (see Appendix). Contrary to expectations, we do not find that students with parents with higher educational attainment feel more socially integrated (with other students). However, this model presents the average effect across all 13 countries. A possible explanation for this unexpected finding is that this relation varies across countries. The next section focuses on differences between countries.

Next, turning to the role of parents' financial situations, we found that students with parents who are not (at all) well-off feel less socially integrated compared to students with parents who are averagely well-off. Consequently, students with very well-off parents, feel more socially integrated with fellow students. This is in line with findings from previous research (Ahn & Davis, 2020).

Regarding time spent on work, Figure 7 provides no evidence that time spent working is negatively related to students' integration with fellow students. In fact, students who spend more time working, feel more socially integrated with their fellow students. This indicates that there is no trade-off; time spent on work does not seem to conflict with being able to socially integrate with fellow students. Another explanation for this finding may be that students often have (side) jobs in sectors where many other students work as well, for example in catering, pubs, coffee shops or on campus. Also with regard to students' study intensity, we found a positive and significant relation.

Students who indicate a medium or high study intensity feel more socially integrated with other students than those who indicate that their study intensity is low.

Across the EUROSTUDENT countries, we found that some student groups feel more or less socially integrated with their fellow students. On average (across all countries), the following groups feel significantly less socially integrated with fellow students (for models, see Table 1 in the Appendix):

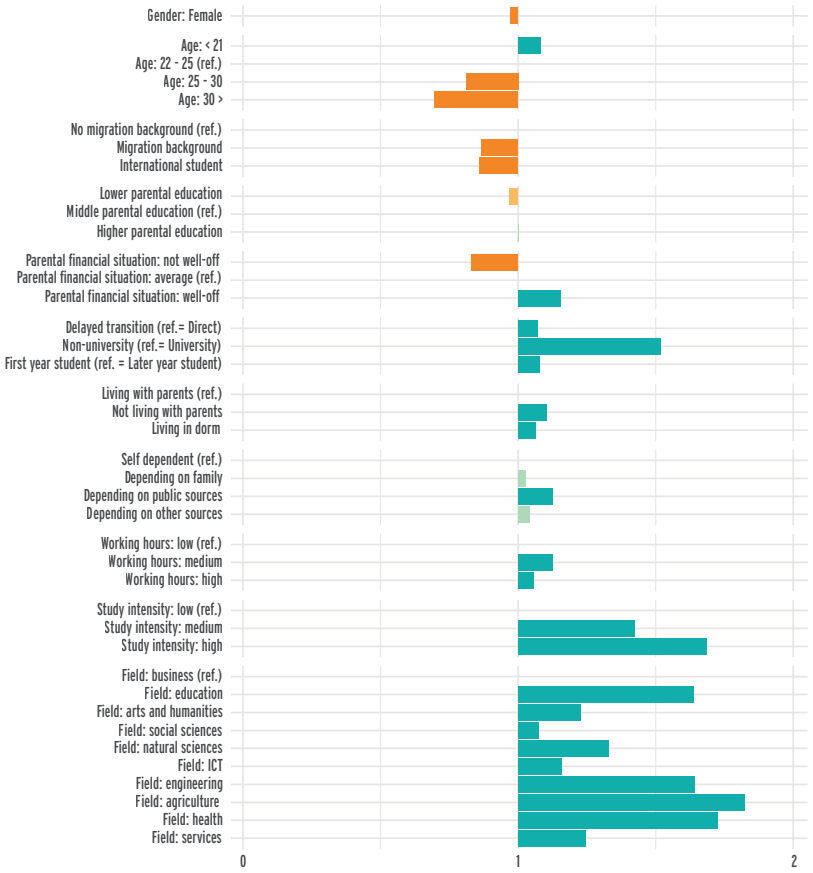
- Female students
- Older students, especially those older than 30 years
- Students with a migration background (i.e. at least one of the parents is born abroad)
- International students
- Students in the field of business (vs. all other fields of study)

In contrast, the following groups of students feel, on average, more socially integrated with other students:

- Delayed transition students (i.e. students who entered HE with a delay of more than two years after leaving school)
- Non-university students (vs. university students)
- First-year students
- Students who do not live with their parents and students living in dorms (vs. students living in their parental home)
- Students who financially depend more on public funds (vs. those who financially depend more on their own income/earnings)

FIGURE 7 | TWO-LEVEL LOGISTIC REGRESSION ON SOCIAL INTEGRATION WITH STUDENTS

($N_{COUNTRIES}$=13; $N_{INDIVIDUALS}$=124,695)



[*Source:* EUROSTUDENT VII Micro Data (Cuppen et al., 2021)]

Note: Dark-coloured orange (negative) and turquoise (positive) bars indicate significant effects ($p < 0.05$), while light-coloured bars indicate non-significant effects.

Social integration with lecturers

Figure 8 demonstrates the findings of the full model on social integration with regards to lecturers. First, we found an unexpected negative relationship between parental educational background and students' level of social integration with their lecturers. Contrary to expectations, students with higher educated parents feel less socially integrated with regard to their lecturers than those with medium educated parents. However, and as mentioned earlier, this model presents average effects across all 13 countries. Again, the next section provides evidence that this relationship varies across countries and addresses these national differences.

The relationship between the parents' financial situation and students' level of social integration with lecturers is similar to integration with their fellow students: the more well-off parents are, the more socially integrated students feel (with their lecturers). This is in line with findings from previous research (Ahn & Davis, 2020).

Next, findings show that students who spend more time working feel less socially integrated with their lecturers. However, this is only the case among those who work a lot of hours (more than 20 hours a week). What is interesting is that there seems to be a trade-off in feeling socially integrated with lecturers, but not with other students. This underscores the importance of distinguishing social integration between lecturers and students (i.e. groups of people one can feel a stronger sense of social integration for). Turning to study intensity, we found that only students who experience medium study intensity feel more socially integrated with their lecturers, which is different from what we found for social integration with fellow students. With regards to students, the higher the study intensity, the more students feel integrated with their fellow students. However, regarding lecturers, only students who indicate they have a medium study intensity, have stronger feelings of social integration with their lecturers. An explanation might be that students with a low study intensity feel less connected with lecturers, whereas students with high study intensity have other reasons (such as uncertainty about study performance) why they feel less integrated. Another explanation for the latter pattern is that their study intensity is done (mostly) independently of their lecturers, in their own time, resulting in lower social connectedness. However, more research is needed to empirically test these assumptions.

In the previous model we saw that some student groups feel a greater or lesser sense of being socially integrated with fellow students. For being socially integrated with lecturers, we also see differences among groups of students. On average (across all countries), the following groups feel less socially integrated with lecturers (for models, see Table 2 in the Appendix):

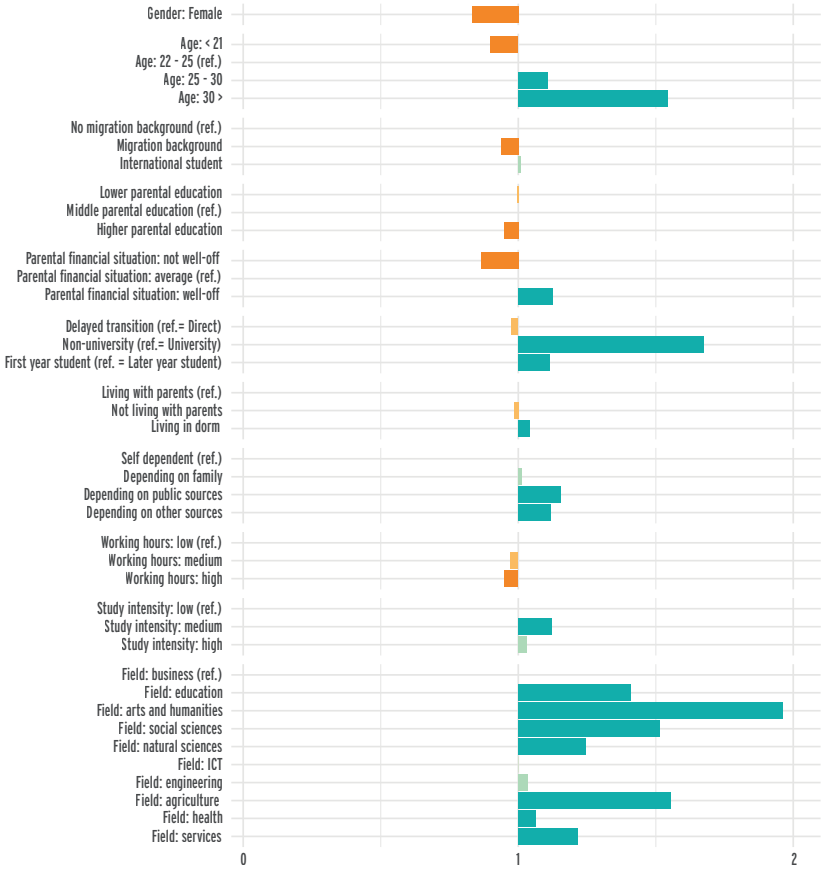
- Female students
- Older students, especially those older than 30 years
- Students with a migration background (i.e. at least one of the parents is born abroad)
- Students in the field of business (vs. almost all other fields of study except engineering and ICT)

In contrast, the following groups of students feel, on average, more socially integrated with lecturers:

- Non-university students (vs. university students)
- First-year students
- Students who live in dorms (vs. those living at their parental home), so not all students who live away from their parents
- Students who financially depend more on public funds or other financial resources[4] (vs. those who are more financially self-dependent)

4. 'Other financial resources': see footnote 2

FIGURE 8 | TWO-LEVEL LOGISTIC REGRESSION ON SOCIAL INTEGRATION WITH LECTURERS ($N_{COUNTRIES}$=13; $N_{INDIVIDUALS}$=124,695)



[*Source:* EUROSTUDENT VII Micro Data (Cuppen et al., 2021)]

Note: Dark-coloured orange (negative) and turquoise (positive) bars indicate significant effects ($p < 0.05$), while light-coloured bars indicate non-significant effects.

Country differences in social integration

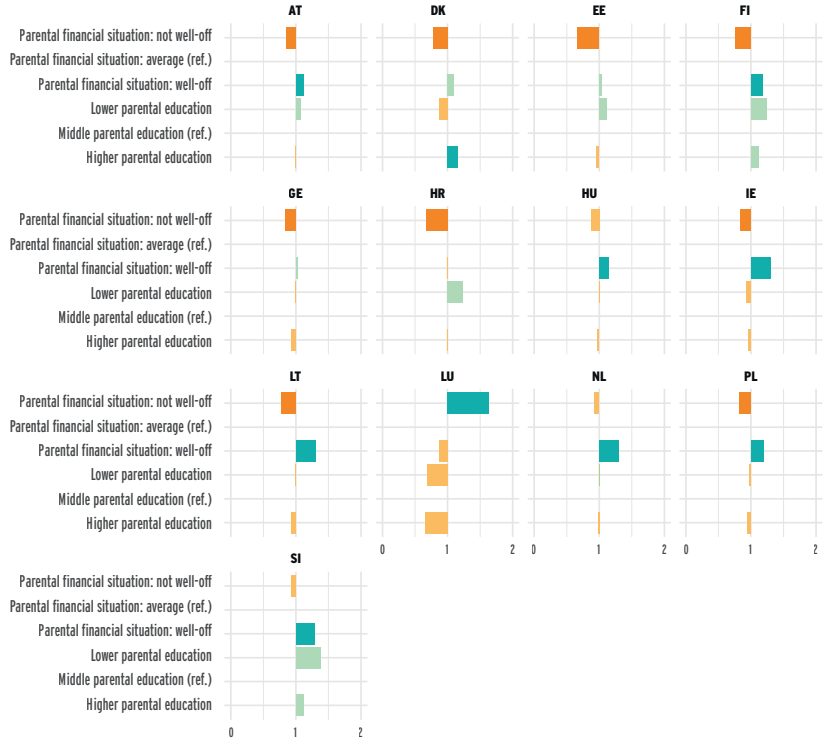
Now that we have discussed the average (fixed) effects across all countries, the following section focuses on differences between countries for our three main topics of interest, namely the relationship of (1) students' socio-economic background, (2) time spent on work, and (3) their study intensity, with regard to students' level of social integration with other students and lecturers. We ran logistic multivariate models including all independent variables for each country separately. In the graphs, we only show (and discuss) the parameters of socio-economic background and time spent on work and study intensity. The statistical models are similar to the models previously described.

Socio-economic background: social integration with fellow students

Starting off with social integration with fellow students, we see different patterns across countries with regards to the role of the parental financial situation (see Figure 9). In nine out of 13 countries, students with parents who are not (at all) well-off feel less socially integrated with other students compared to students that are averagely well-off. Only Luxembourg stands out, where students with not (at all) well-off parents actually feel more socially integrated with their fellow students. The three remaining countries (Hungary, the Netherlands and Slovenia) show no significant difference between these groups. Next, in ten out of 13 countries, students with parents who are well-off feel more socially integrated with other students than their counterparts who are averagely well-off. Apart from a few differences, most countries show similar patterns in that students whose parents are more well-off feel more socially integrated than students that are less well-off.

Next, the average effect of parental educational background on social integration with other students is not significant. When looking at the country patterns, we do find a positive relationship in Denmark. Here, students with highly educated parents feel more socially integrated with their fellow students than students with parents who have an average educational attainment. All in all, parental educational background seems to have a very limited effect when other variables are taken into account.

FIGURE 9 | LOGISTIC MULTIVARIATE REGRESSIONS PER COUNTRY: EFFECTS OF STUDENTS' SOCIO-ECONOMIC BACKGROUND ON SOCIAL INTEGRATION WITH FELLOW STUDENTS



[*Source:* EUROSTUDENT VII Micro Data (Cuppen et al., 2021)]

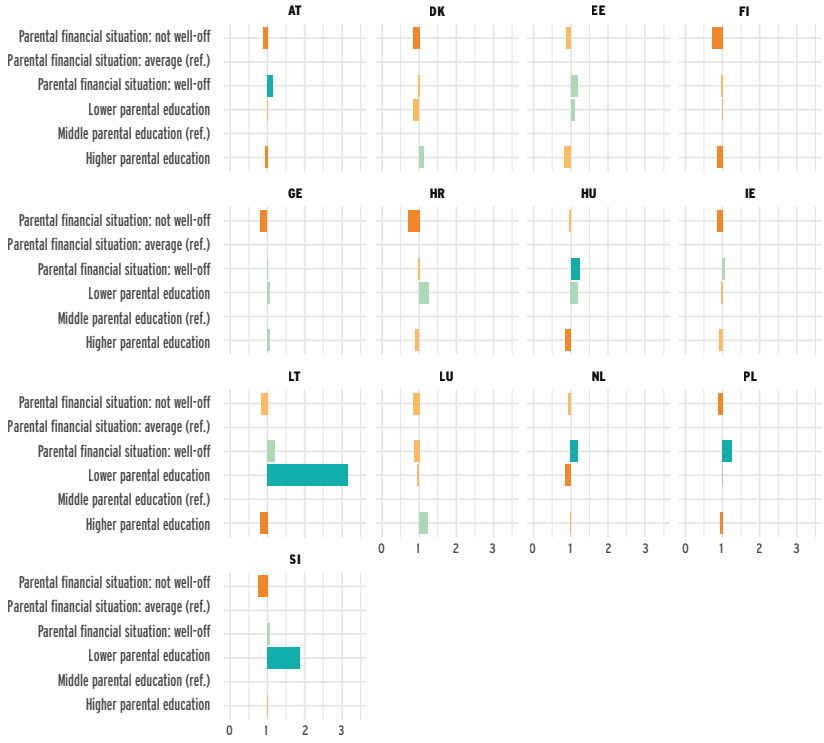
Note: Dark-coloured orange (negative) and turquoise (positive) bars indicate significant effects ($p < 0.05$), while light-coloured bars indicate non-significant effects.

Socio-economic background: social integration with lecturers

The relationship between students' socio-economic background and their level of social integration with lecturers also varies across countries (see Figure 10). In the majority of the countries (eight out of 13), students with parents who are not (at all) well-off feel less integrated with their lecturers compared to averagely well-off students. Significant differences between students of parents who are well-off versus averagely well-off are only found in Austria, Hungary, the Netherlands and Poland. Thus, in most countries, students who are not well-off run the risk of feeling less socially integrated with lecturers.

The role of parental educational background is more diffuse. In no single country do students with higher educated parents feel more socially integrated with lecturers than students with medium educated parents. In fact, these students feel less socially integrated with lecturers in Austria, Finland, Hungary, Lithuania and Poland. With regards to students with lower educated parents (vs. students with medium educated parents), students feel more socially integrated with their lecturers in Hungary, Lithuania and Slovenia; however, this group feels less integrated with lecturers in the Netherlands. An important conclusion we draw from this is that future research should be careful in overgeneralising the positive relation between parental educational background and social integration in higher education with both students and lecturers, as this may differ between countries but may also weaken or prove insignificant if confounding factors are (sufficiently) accounted for in the models. Another possible explanation is that different groups of students have different expectations. For instance, students with higher educated parents may have higher expectations and may then be disappointed if these expectations are not met.

FIGURE 10 | LOGISTIC MULTIVARIATE REGRESSIONS PER COUNTRY: EFFECTS OF STUDENTS' SOCIO-ECONOMIC BACKGROUND ON SOCIAL INTEGRATION WITH LECTURERS



[*Source:* EUROSTUDENT VII Micro Data (Cuppen et al., 2021)]

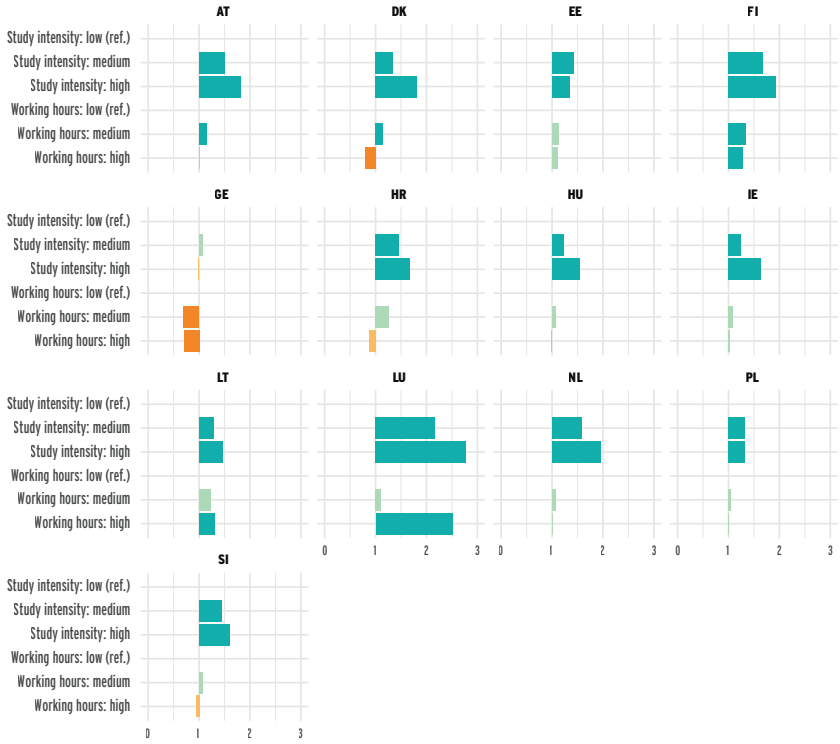
Note: Dark-coloured orange (negative) and turquoise (positive) bars indicate significant effects ($p < 0.05$), while light-coloured bars indicate non-significant effects.

Study intensity and time spent on work: social integration with fellow students

Earlier findings showed that, on average (across all countries), both time spent on work and study intensity are positively related to students' level of social integration with fellow students. Figure 11 shows how study intensity relates to students' level of social integration with fellow students in each country separately. For all countries, except for Georgia, we see a similar relation: the higher the study intensity, the higher the probability that students indicate that they feel socially integrated with their fellow students.

Next, the relation between the number of working hours is much more diverse between countries. For four countries (Austria, Finland, Lithuania and Luxembourg), students who indicate that they spend a medium or high amount of time on work (or both in the case of Finland) also indicate being more socially integrated with fellow students, compared to students who spend a low amount of time on their job. The opposite is found in Georgia. Here, students feel less socially integrated with their fellow students the more time they spend on working (medium or a high amount of time). We also found this also to be the case among Danish students, but only among those who indicate to spend a high amount of time working (i.e. more than 20 hours a week). In the remaining seven countries (i.e. Estonia, Croatia, Hungary, Ireland, the Netherlands, Poland and Slovenia) no significant effects are found for time spent working and social integration with fellow students when controlling for all other variables.

FIGURE 11 | LOGISTIC MULTIVARIATE REGRESSIONS PER COUNTRY: EFFECTS OF STUDENTS' TIME SPENT ON WORK AND STUDY INTENSITY ON SOCIAL INTEGRATION WITH FELLOW STUDENTS



[*Source:* EUROSTUDENT VII Micro Data (Cuppen et al., 2021)]

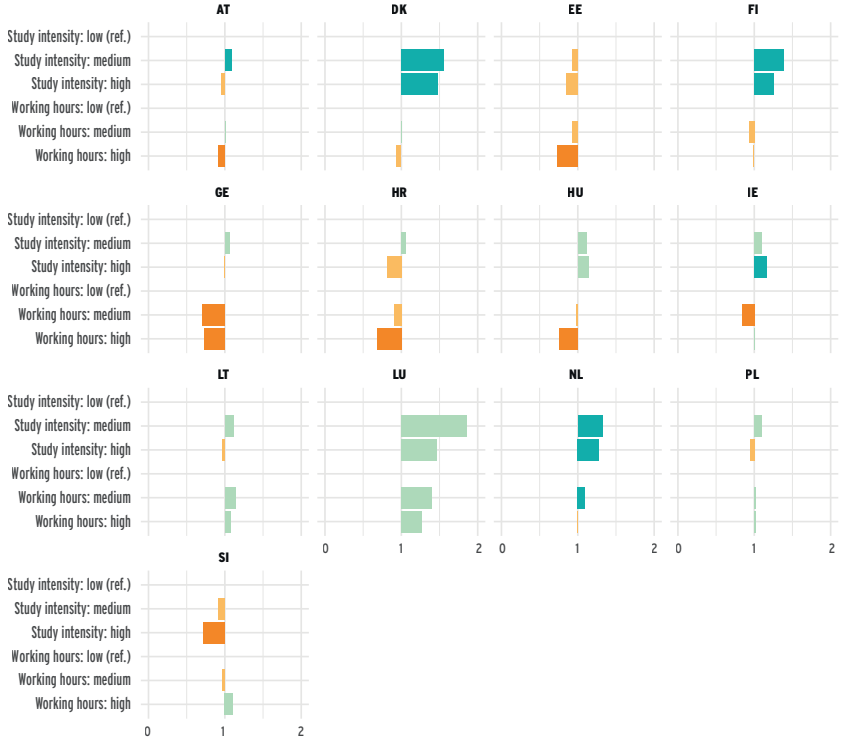
Note: Dark-coloured orange (negative) and turquoise (positive) bars indicate significant effects ($p < 0.05$), while light-coloured bars indicate non-significant effects.

Study intensity and time spent on work: social integration with lecturers

Regarding students' level of social integration with their lecturers, the findings in the previous section showed that, on average, a medium study intensity is associated more with feeling more socially integrated with lecturers, whereas a high amount of time spent on working is associated with a lesser sense of feeling socially integrated with lecturers. Figure 12 shows different patterns across countries with regards to the role of study intensity. In four out of 13 countries (Austria, Denmark, Finland and the Netherlands), a medium study intensity is related to a higher level of social integration with lecturers. Interestingly, a high study intensity is associated with feeling less socially integrated with lecturers in Slovenia. In the remaining countries (a total of seven), no significant relation is found.

Next, Figure 12 shows a negative relation between time spent on work and social integration with lecturers in seven out of 13 countries. This is especially the case among students who spend a high amount of time working. Only in the Netherlands do students who spend a medium amount of time working feel slightly more socially integrated with lecturers compared to students who spend a low amount of time on work. Lastly, no significant relationship is found in the remaining six countries.

FIGURE 12 | LOGISTIC MULTIVARIATE REGRESSIONS PER COUNTRY: EFFECTS OF STUDENTS' TIME SPENT ON WORK AND STUDY INTENSITY ON SOCIAL INTEGRATION WITH LECTURERS



[*Source:* EUROSTUDENT VII Micro Data (Cuppen et al., 2021)]

Note. Dark-colored orange (negative) and turquoise (positive) bars indicate significant effects ($p < 0.05$), while light-colored bars indicate non-significant effects.

5

Summary and discussion

In summary, the descriptive analyses shows that students generally feel relatively well socially integrated, with values above the midpoint of the scale for all four items (knowing fellow students to discuss subject-related questions, having contact with other students, getting along well with lecturers and feeling that lecturers are interested in what students have to say). Overall, feelings of integration are stronger with regard to lecturers than with peers in most countries, with feeling heard by lecturers being rated lower in all countries than getting along with them.
The descriptive analysis of differences between student groups based on their demographic and social background and their living and study conditions highlights that students' families' financial status plays a particular role: in all countries, students from families that are not at all well-off report a lower level of social integration than their peers from better-off families in all countries. Contrary to expectations, students from different educational backgrounds do not differ in their assessment of their integration – students with parents without tertiary education are socially not less well integrated than others. With regard to demographic characteristics, no differences between males and females were found, and no clear pattern according to migration background or age emerged – in some countries, the latter two characteristics are associated with a higher level of social integration; in others, the pattern is reversed. With regard to living conditions, neither working more than 20 hours a week nor being dependent on self-earned income makes an essential difference for students' overall social integration, but students with low study intensities are slightly less well integrated overall. Among study-related aspects, only a delayed transition into higher education is associated with varying levels of social integration, but not in a clear way, whereas the type of institution or progress in study (first year vs. later) does not make a difference for overall social integration.

The multivariate models broadly confirm the overall findings but add some insights. As in the descriptive analyses, somewhat surprisingly, the overall multivariate model does not show a relationship between parents' education and students' social integration with either fellow students or lecturers. However, in single country models, this effect does prove to be significant – however, not necessarily in a way that could be expected.

In Denmark, students' with highly educated parents actually report feeling less well integrated with their fellow students, and this unexpected relationship between parental educational background and students' level of social integration is also found with regard to lecturers on average across all countries: students with higher educated parents feel less socially integrated with regard to their lecturers than those with medium educated parents. Analysis of country patterns shows that this is due to these students feeling less socially integrated with lecturers in Austria, Finland, Hungary, Lithuania and Poland.

Parental financial status, however, shows a clear effect in the expected direction in the multivariate model: students with parents who are not (at all) well-off feel less socially integrated compared to students with parents who are averagely well-off, and vice versa, with regard to both lecturers and students. With a few exceptions, these patterns are found in most countries. The models also confirm that students who indicate a medium or high study intensity feel more socially integrated with other students than those who indicate that their study intensity is low in all countries but one. When it comes to lecturers, only students that experience medium study intensity (not high) feel more socially integrated with their lecturers. With regard to this factor, different factors appear to be at play. Furthermore, this effect can be traced back to the respective pattern being present in only four countries (Austria, Denmark, Finland and the Netherlands) – no significant effects are found in the remaining countries. Finally, time spent on work is also apparently related differently to students' integration with students versus with lecturers: students who spend more time working feel more socially integrated with their fellow students, indicating that time spent on work does not seem to conflict with being able to socially integrate with fellow students. Potentially, this is due to the fact that students often have (side) jobs in sectors where many other students work as well, for example in catering, pubs, coffee shops or on campus. Again, when looking at the country patterns, this effect can be traced back to four countries (Austria, Finland, Lithuania and Luxembourg) in which students who indicate that they spend a medium or high amount of time on work (or both in the case of Finland) also report being more socially integrated with fellow students, compared to students who spend a low amount of time on their job. By contrast, on average, students who spend more time working (more than 20 hours per week) feel less socially integrated with their lecturers. This negative relation between time spent on work and social integration with lecturers is found in seven out 13 countries. There is therefore a clear difference in the potential effects of time

spent on work: while it appears to be beneficial for social integration with other students, a negative relationship for the integration with lecturers can be expected. This underscores the importance of distinguishing between the social integration of students with fellow students on the one hand, and with lecturers on the other, as two different aspects of social integration.

Taken together, the findings contribute to the understanding of social integration in several ways. Due to the large number and wide geographical range of countries covered in this report, the common patterns found across countries can be considered to be stable and to some degree universal. Of particular relevance in this regard is the finding that a low level of parental education does not emerge as a negative influential factor for students' social integration as expected. In contrast, in several countries, particularly students with highly educated parents see room for improvement with regard to their contact and interaction with lecturers. This may indicate that these students had higher expectations regarding the interactions with lecturers, and these were disappointed. Parental financial status, however, is identified as relevant for students' integration with both students and lecturers, thus clarifying which aspects of students' socio-economic background are important with regard to their feeling of integration in higher education. The multivariate models in particular allow for confidence in the results, as a wide range of potentially confounding variables could be included. The other clear finding in many countries – the detrimental relationship between time spent on work for social integration with lecturers – points out the relevance of students' personal circumstances for their study experience, and potentially mid- to long-term success. Creating structures and teaching approaches which allow students who combine work and study to feel fully integrated in the higher education context still appears to be a challenge which has not yet been fully mastered in all countries. As the need to work and the extent of paid employment are also strongly related to students' socio-demographic characteristics (Masevičiūtė et al., 2018), this aspect is also potentially of relevance when considering the social dimension of higher education.

Some limitations with regard to the data and findings must be noted, however. As we are, to some extent, dependent on the availability of variables in the EUROSTUDENT questionnaire, the selection of model variables, though relatively broad, is based not only on theoretical considerations, but also to some extent on availability. Although important aspects from all potentially relevant areas of students' background and lives

could be included, the models do not fully represent a coherent conceptual framework. Similarly, the selection of countries covered was also due to availability of micro data, rather than being based on a more targeted inclusion of countries and taking conceptually relevant system characteristics into account.

In fact, widening the analyses to include such system-level characteristics appears to be a fruitful route for future analyses. Our findings show that the relationships between the posited variables are not the same in all countries. Adding indicators about the national higher education system, such as admission policies or study organisation, as well as variables related to the national political or cultural characteristics could contribute to understanding the reasons behind the differences between countries. Furthermore, extending the models to include more distal outcome variables at the level of students, such as persistence or performance would provide additional explanatory power, especially in the context of countries where social integration of students has not previously been extensively examined.

6

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Living situation														
Living with parents = ref.														
Away from parents							0.098***	0.015	0.094***	0.015	0.098***	0.015	0.099***	0.015
Living in dorm							0.083***	0.018	0.072***	0.018	0.073***	0.018	0.061***	0.018
Missing							0.042	0.041	0.045	0.042	0.107*	0.045	0.102*	0.046
Financial dependency (self-dependent = ref.)														
On family									0.066***	0.017	0.060**	0.020	0.028	0.020
On public funds									0.146***	0.023	0.141***	0.025	0.119***	0.025
Other									0.093***	0.022	0.069**	0.023	0.041~	0.023
Missing									0.039*	0.020	0.039~	0.021	0.031	0.021
Time spent on work (low = ref.)														
Medium											0.110***	0.015	0.118***	0.015
High											-0.030	0.021	0.056**	0.021
Missing											-0.041	0.028	0.055~	0.033
Study intensity (low = ref.)														
Medium													0.354***	0.017
High													0.523***	0.019
Missing													0.202***	0.025
Field of study														
Education			0.459***	0.022	0.486***	0.023	0.511***	0.023	0.506***	0.023	0.498***	0.023	0.492***	0.023
Arts and humanities			0.130***	0.021	0.157***	0.021	0.219***	0.022	0.211***	0.022	0.205***	0.022	0.204***	0.022
Social sciences			-0.050*	0.022	-0.048*	0.022	0.059**	0.023	0.054*	0.023	0.049*	0.023	0.072**	0.023
Natural sciences			0.258***	0.024	0.217***	0.024	0.331***	0.024	0.323***	0.024	0.320***	0.025	0.284***	0.025
ICTs			0.156***	0.026	0.157***	0.027	0.169***	0.027	0.166***	0.027	0.168***	0.027	0.146***	0.027
Engineering			0.518***	0.021	0.509***	0.021	0.544***	0.021	0.538***	0.021	0.536***	0.021	0.495***	0.022
Agriculture			0.580***	0.039	0.566***	0.040	0.623***	0.040	0.611***	0.040	0.610***	0.040	0.600***	0.040
Health and welfare			0.625***	0.021	0.623***	0.021	0.612***	0.021	0.603***	0.021	0.601***	0.021	0.545***	0.021
Services			0.326***	0.033	0.314***	0.033	0.227***	0.034	0.223***	0.034	0.219***	0.034	0.219***	0.034
Intercept	0.321***	0.043	0.057	0.046	0.163**	0.053	-0.085	0.061	-0.134*	0.062	-0.160*	0.065	-0.457***	0.063
Country variance	0.023	0.152	0.025	0.159	0.030	0.173	0.040	0.200	0.041	0.203	0.042	0.206	0.038	0.196
Log likelihood	-84649.1		-83767.3		-83112.2		-82621.4		-82598.1		-82553.6		-82147	

[*Source:* EUROSTUDENT VII Micro Data (Cuppen et al., 2021). $N_{countries}$ = 13, $N_{individuals}$ = 124,695.*** p <0.001; ** p <0.01; * p <0.05; ~ p <0.10 (two-tailed)

Appendix

TABLE 1 | TWO-LEVEL LOGISTIC REGRESSION MODELS ON SOCIAL INTEGRATION WITH STUDENTS (LOGIT EFFECTS).

	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Female (male = ref.)					-0.012	0.013	-0.016	0.013	-0.016	0.013	-0.019	0.013	-0.029*	0.013
Age (22 to < 25 years = ref.)														
Up to 21 years					0.116***	0.015	0.095***	0.016	0.087***	0.016	0.084***	0.016	0.080***	0.016
25 to < 30 years					-0.217***	0.017	-0.243***	0.017	-0.233***	0.018	-0.224***	0.018	-0.210***	0.018
30 years or older					-0.363***	0.019	-0.450***	0.021	-0.425***	0.021	-0.397***	0.022	-0.363***	0.022
Migration background (native = ref.)														
Migrant					-0.155***	0.019	-0.145***	0.019	-0.147***	0.020	-0.146***	0.020	-0.144***	0.020
International student					-0.112***	0.020	-0.138***	0.020	-0.134***	0.021	-0.132***	0.021	-0.149***	0.021
Missing					-0.160***	0.032	-0.155***	0.033	-0.152	0.033	-0.146***	0.033	-0.143***	0.033
Parental educational background (medium = ref.)														
Low					-0.006	0.026	-0.031	0.026	-0.030	0.026	-0.028	0.026	-0.032	0.026
High					-0.030*	0.014	0.011	0.014	0.010	0.015	0.008	0.015	0.003	0.015
Missing					-0.042*	0.020	-0.037~	0.020	-0.037~	0.020	-0.035~	0.020	-0.040~	0.020
Parental financial situation (average = ref.)														
Not (at all) well-off					-0.171***	0.017	-0.173***	0.017	-0.179***	0.017	-0.177***	0.017	-0.185***	0.017
(Very) well-off					0.119***	0.014	0.133***	0.014	0.135***	0.014	0.134***	0.014	0.142***	0.014
Missing					0.012	0.035	0.027	0.037	0.029	0.037	0.036	0.038	0.041	0.038
Delayed transition (direct = ref.)							0.091***	0.018	0.083***	0.018	0.082***	0.018	0.069***	0.019
Non-university (ref. = university)							0.416***	0.015	0.421***	0.015	0.428***	0.015	0.416***	0.015
First year student (no = ref.)							0.071***	0.017	0.069	0.017	0.075***	0.017	0.076***	0.018

Living situation																
Living with parents = ref.																
Away from parents							-0.013	0.015	-0.019	0.015	-0.017	0.015	-0.016	0.015		
Living in dorm							0.058**	0.018	0.045*	0.018	0.043*	0.018	0.041*	0.018		
Missing							-0.083*	0.041	-0.079~	0.041	0.020	0.045	-0.001	0.045		
Financial dependency (self-dependent = ref.)																
On family									0.042*	0.017	0.016	0.020	0.011	0.020		
On public funds									0.172***	0.023	0.145***	0.025	0.143***	0.025		
Other									0.137***	0.022	0.117***	0.023	0.111***	0.023		
Missing									0.037~	0.020	0.027	0.021	0.031	0.021		
Time spent on work (low = ref.)																
Medium											-0.021	0.015	-0.028~	0.015		
High											-0.055**	0.021	-0.051*	0.021		
Missing											-0.156***	0.028	-0.076*	0.033		
Study intensity (low = ref.)																
Medium													0.114***	0.017		
High													0.031	0.019		
Missing													-0.043~	0.026		
Field of study																
Education			0.301***	0.022	0.317***	0.023	0.349***	0.023	0.344***	0.023	0.343***	0.023	0.342***	0.023		
Arts and humanities			0.562***	0.022	0.598***	0.022	0.684***	0.022	0.677***	0.022	0.673***	0.022	0.673***	0.022		
Social sciences			0.247***	0.022	0.286***	0.022	0.423***	0.023	0.418***	0.023	0.416***	0.023	0.415***	0.023		
Natural sciences			0.047*	0.023	0.090***	0.024	0.233***	0.024	0.225***	0.024	0.220***	0.024	0.218***	0.024		
ICTs			0.053*	0.026	0.000	0.027	0.009	0.027	0.005	0.027	0.001	0.027	0.000	0.027		
Engineering			0.027	0.020	-0.002	0.021	0.041*	0.021	0.035~	0.021	0.031	0.021	0.033	0.021		
Agriculture			0.345***	0.039	0.373***	0.039	0.456***	0.040	0.442***	0.040	0.439***	0.040	0.442***	0.040		
Health and welfare			0.037~	0.020	0.075***	0.020	0.067**	0.021	0.059**	0.021	0.055**	0.021	0.060**	0.021		
Services			0.306***	0.033	0.306***	0.034	0.201***	0.034	0.196***	0.034	0.195***	0.034	0.196***	0.034		
Intercept	0.338***	0.057	0.185***	0.056	0.312***	0.058	0.107*	0.051	0.058	0.053	0.097~	0.054	0.045	0.056		
Country variance	0.041	0.203	0.039	0.197	0.037	0.192	0.026	0.163	0.027	0.164	0.027	0.163	0.026	0.162		
Log likelihood	-84635.8		-84126.3		-83549.2		-82876.9		-82838.5		-82822		-82779.6			

[*Source:* EUROSTUDENT VII Micro Data (Cuppen et al., 2021). $N_{countries}$ = 13, $N_{individuals}$ = 124,695.*** p <0.001; ** p <0.01; * p <0.05; ~ p <0.10 (two-tailed)

Appendix

TABLE 2 | TWO-LEVEL LOGISTIC REGRESSION MODELS ON SOCIAL INTEGRATION WITH LECTURERS (LOGIT EFFECTS).

	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Female (male = ref.)					-0.179***	0.013	-0.186***	0.013	-0.186***	0.013	-0.184***	0.013	-0.183***	0.013
Age (22 to < 25 years = ref.)														
Up to 21 years					-0.036*	0.014	-0.094***	0.016	-0.100***	0.016	-0.103***	.016	-0.107***	0.016
25 to < 30 years					0.081***	0.017	0.085***	0.017	0.094***	0.018	0.097***	0.018	0.101***	0.018
30 years or older					0.426***	0.020	0.394***	0.021	0.419***	0.022	0.426***	0.022	0.434***	0.022
Migration background (native = ref.)														
Migrant					-0.066***	0.019	-0.066***	0.019	-0.068***	0.019	-0.068***	0.019	-0.066***	0.01
International student					-0.012	0.020	0.003	0.021	0.011	0.021	0.007	0.021	0.010	0.021
Missing					-0.246***	0.032	-0.229***	0.033	-0.226***	0.033	-0.219***	0.033	-0.218***	0.033
Parental educational background (medium = ref.)														
Low					0.028	0.026	-0.002	0.026	-0.003	0.026	-0.003	0.026	-0.005	0.026
High					-0.106***	0.014	-0.055***	0.014	-0.053***	0.014	-0.054***	0.014	-0.054***	0.014
Missing					-0.066**	0.020	-0.059**	0.020	-0.058**	0.020	-0.059**	0.020	-0.058***	0.020
Parental financial situation (average = ref.)														
Not (at all) well-off					-0.143***	0.017	-0.137***	0.017	-0.147***	0.017	-0.147***	0.017	-0.147***	0.017
(Very) well-off					0.096***	0.014	0.114***	0.014	0.120***	0.014	0.120***	0.014	0.119***	0.014
Missing					0.030	0.035	0.057	0.037	0.061	0.037	0.074*	0.038	0.075*	0.038
Delayed transition (direct = ref.)							-0.013	0.019	-0.022	0.019	-0.022	0.019	-0.026	0.019
Non-university (ref. = university)							0.510***	0.015	0.514***	0.015	0.517***	0.015	0.515***	0.015
First year student (no = ref.)							0.116***	0.017	0.116***	0.017	0.114***	0.017	0.109***	0.017

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