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ABSTRACT

Bye, Bye, Hotel Mama, Bye, Bye Good Grades? Living in a Student Room and Exam Results in Tertiary Education*

We study whether living in a student room as a tertiary education student (instead of commuting between one's parental residence and college or university) affects exam results. To the best of our knowledge, we are the first to study this relationship beyond cross-sectional analysis. That is, we exploit rich longitudinal data on 1,653 Belgian freshmen students' residential status and exam scores to control for observed heterogeneity as well as for individual fixed (or random) effects. We find that after correcting for unobserved heterogeneity, the association found in earlier contributions disappears. This finding of no significant impact of living in a student room on exam results is robust for other methods used for causal inference including instrumental variable techniques.

JEL Classification: I23, J24
Keywords: residential status, exam scores, longitudinal data, causality

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1 Introduction

For most young adults, graduation from secondary education (high school) is a milestone. This success, however, is immediately followed by important decisions about their educational future. In particular, students have to decide whether to receive tertiary education. Furthermore, enrolling for this further education implies for many students (and their parents) deciding whether to live at the parental home or at a student residence near the college or university during their tertiary education. Students face this choice when there is no actual need to move to be able to enrol in their study programme of choice.[1] This is typically the case in (a) small countries and (b) countries with a high density of tertiary education institutions offering a wide variety of study programmes. In this study, we investigate the effect on exam scores of this living in a student room during tertiary education studies.

The scientific literature to date provides three main arguments supporting a positive effect of living in a student room on academic achievement. First, there is a vast body of (theoretical) literature postulating that students' academic engagement is linked to academic success (see e.g. Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Residing near campus might lead to more opportunities for (social) integration into the university community resulting in higher student engagement (Schudde, 2011). For this reason, students living further away from campus are assumed to be less engaged in their education and therefore less likely to

[1] Students might need to move (closer) to campus for two different reasons. First, the tertiary education institution may require that students actually live close to campus. For example, at some American colleges students are obliged to live on campus during their first year (see e.g. de Araujo & Murray, 2010). Second, only a limited amount of institutions may offer a desired study programme, so that the closest institution may be located too far from students' home address.

perform well academically (Reynolds, 2020). Second, in line with Social Network Theory (Granovetter, 1973), students living on campus might have easier access to social support from their peers than students living at home (Webb & Turner, 2019). In turn, this easier access to (high-ability) fellow students might lead to positive peer effects on academic achievement (Carell, Fullerton, & West, 2009; Stinebrickner, & Stinebrickner, 2006). Third, commuting students might experience a direct negative commuting effect (Kobus, Van Ommeren, & Rietveld, 2015). That is, there might be a time trade-off as described by Becker (1965): time for (efficient) study activities might get lost due the time invested in commuting activities. In addition, to arrive on time for class, commuting students might have to get up early potentially resulting in poor sleep quality, which in turn is detrimental for their academic performance (Baert, Omey, Verhaest, & Vermeir, 2015).[2]

However, alternative arguments have been raised suggesting a negative effect of living near the university on academic performance. In particular, Turley and Wodtke (2010) argue that living close to campus might offer more opportunities for social rather than academic involvement. Again, this might lead to a time trade-off: time spent on social activities cannot be used productively. Closely linked to this, Schudde (2011) postulates that behaviour such as high alcohol consumption is considered normal in student communities, despite the fact that such behaviour has been associated with poor academic achievement (Piazza-Gardner, Barry, & Merianos, 2016). For this reasons, the stronger social network built by living near campus, might rather hinder students from achieving good grades.

[2] Commuting students, in contrast, might experience a direct positive commuting effect as they might use their travel time productively by studying or working (Kobus et al., 2015). This direct commuting effect only applies if students commute by public transport.

From an empirical point of view, the decision to live in a student room might be endogenous and thus it may prevent a causal interpretation of studies based on cross-sectional analysis (Coutts, Aird, Mitra, & Siemiatycki, 2018; Simpson & Burnett, 2019; Turley & Wodtke, 2010). That is, students might choose to live near campus for reasons that are unobservable to the researcher but that correlate with academic performance (Reynolds, 2020). For instance, highly motivated or disciplined students might be more likely to reside near campus (Kobus et al., 2015). Alternatively, it is possible that students stay at home because of other responsibilities that could hinder their educational outcomes (Reynolds, 2020).

To our knowledge, only three empirical studies have aimed to tackle this endogeneity issue, all applying instrumental variable techniques. Kobus et al. (2015) adopted such an instrumental variable approach to measure the causal impact of commuting time on course grades. They find that a longer journey to university leads to worse exam results. Similarly, de Araujo and Murray (2010) apply different instrumental variable strategies on a smaller sample of 363 college students. They find that living on campus during the previous semester increases students' semester GPA by one third to a full letter grade. More recently, Reynolds (2020) reports, using analogous instrumental estimation techniques, that living on campus does have a small positive effect on first-year students. However, whether these results can be interpreted in a causal manner completely depends on the validity of their exogenous instruments.

To investigate the causal impact of living in student rooms on exam scores alternatively, we exploit unique longitudinal data on students from two Belgian universities. We compare (i) individual fixed-effects and (ii) random-effects approaches. Moreover, we check the robustness of our results by applying instrumental variable techniques similar to those applied in the previous literature.

The remainder of this article is structured as follows. In Section 2, we discuss the data collection procedure and explain our strategy for making causal inferences based on these data. Next, in Section 3, we present and discuss the results of our empirical analyses. Finally, in Section 4, we acknowledge the main limitations of the current study, and provide directions for future research.

2 Data

2.1. Institutional Setting

To answer the question of whether students' living arrangements have an impact on their grades, we surveyed students in eleven different study programmes divided among two major Belgian universities, i.e., Ghent University and University of Antwerp, by means of a pen-and-paper questionnaire. The Belgian institutional context differs slightly from the (American) academic settings previously studied in four ways. First, Belgian universities typically are city universities rather than universities concentrated in a single campus. Faculty buildings are physically spread throughout the city. Second, almost all Belgian universities offer a wide variety of study programmes. This implies that students typically have the opportunity to enrol in their programme of choice at a university relatively close to their parental home. Third, every student with a secondary school diploma can enrol, without an entry exam or competitive application procedure, at the institution of his or her choice.[3] Finally, enrolment fees are homogenous by institution and are relatively low.

2.2. Research population

At the two aforementioned universities, we surveyed all students present in class for eleven different study programmes over three successive years. Over the three years and the different study programmes, an analogous procedure was applied. During the last week of the autumn semester, one of the authors visited a main class in the students' curriculum and requested that the attending students complete a pen-and-paper questionnaire. At the end of the questionnaire, the students were asked for their consent to combine their questionnaire answers with their grades in the upcoming exam period. In the first year, 2016, we surveyed all first-year students attending class. In the second year, we targeted those students who had participated before and also surveyed the new generation of freshmen students. During the third year, we followed a similar procedure targeting previous participants and freshmen students. This approach was applied in December 2016, 2017, and 2018 at the University of Antwerp. At Ghent University, students were surveyed in 2016 and 2017.

In total, we collected 2,035 completed questionnaires over the three instances of data collection. The faculty administration did not provide exam scores for 104 observations, implying that the respective students had dropped out before the start of the exam period. Additionally, we excluded 25 observations because of incomplete or inconsistent information.

[3] The only exception is the entry exam for students who want to study medicine since there is a yearly numerus clausus for this study programme.

Finally, we retained information about 1,653 unique individuals resulting in 1,906 complete observations.

2.3. Measures

The final dataset combined information from two different sources. First, our pen-and-paper questionnaires asked the students about their living arrangements and important control variables such as socio-economic background, family structure, and perceived health. Second, for all consenting students, the faculty administration provided their exam results to an independent third party who merged these exam results with their survey answers.

With respect to students' residence status, the pen-and-paper questionnaire contained two different questions. First, students were simply asked 'Do you currently live in a student room?' Second, we asked students to provide the name of the municipality of their official address. For commuting students, this corresponds to the municipality where they are currently living. For students living in a student room, this can be either (i) the city where the university is located, or (ii) their home town, since students do not officially have to change their address when living in a student room.[4] Based on this information, we calculated – in line with Turley and Wodtke (2010) – the straight-line distance in kilometres between the centre of the municipality of each student's official address and the centre of the city where the university is located.[5] This distance variable is very similar to the instrument variables used by, among others, de Araujo and Murray (2010), and is of particular interest for checking the

[4] Typically students living in a student room do not change their official address. This implies that the official address of most students is located in their municipality of origin.

[5] We calculated this straight-line distances using the free open-source project OpenStreetMap (www.openstreetmap.org)

robustness of our benchmark analyses (see below). Panel A of Table 1 presents the average scores for both measures.[6] Slightly more than a third (33.9%) of our sample lived in a student room, which is significantly lower than the 70.0% reported in the UK by Webb and Turner (2019). On average, students live only 25.44 kilometres from their universities. However, we see that the official addresses of students living in student rooms are significantly further away from their universities, suggesting that this variable might be a valid instrumental variable (see below). The fact that students attend universities relatively close to home, and that only a third of them live near campus suggests that the Belgian context differs substantially from the Anglo-Saxon academic settings studied previously.

<Table 1 about here >

Next, the survey contained questions on observable factors that may be correlated both with academic performance and the decision to live in a student room. These control variables are divided into three groups – as can be seen in Table 1 – depending on how they change over time: (i) time-invariant control variables (Panel B), (ii) predetermined time-varying control variables (Panel C), and (ii) time-varying control variables. First, we surveyed the students on the socioeconomic predictors of academic performance, that do not change over time, as proposed by Baert et al. (2015): gender, origin, father's educational achievement, family structure, and educational achievement prior to starting at university. As can be seen from Panel B in Table 1, the subsample of students living in a student room contains significantly more female students. Furthermore, fewer students who (i) have a foreign origin, (ii) do not speak Dutch as main language, (iii) are only children, (iv) are from a

[6] We pooled the summary statistics at the observational level for ease of presentation. Summary statistics at the individual level are available upon reasonable request.

family with three or more children, and (iv) are enrolled at the University of Antwerp, live in a student room.

Additionally, students responded to questions with respect to predetermined time-varying control variables, that is, variables which were – in principle – determined before the academic year in which the survey was completed. Two binary variables were constructed with respect to family structure by the start of the year: (i) whether students' parents were divorced, and (ii) whether at least one of their parents had passed away. Next, in line with Amez, Vujić, De Marez, and Baert (2019), the students' academic curricula were captured in three ways. First, we registered how many ECTS-credits the students were planning to obtain in the upcoming exam period. Second, we constructed a binary variable indicating whether a student was retaking at least one of their subjects. Third, binary variables were constructed to indicate the specific academic programme in which the student was enrolled during the academic year of data collection.

Additionally, we gathered information on time-varying control variables. As highly-motivated students might be eager to move close to their university (Kobus et al., 2015), we aimed to (partly) capture this motivation by including the college version of the Academic Motivation Scale of Vallerand et al. (1992) in the questionnaire. Students have to score 28 different items on a seven-point scale. All items are then averaged resulting in a score between 1 and 7. Students with higher scores are more academically motivated. Students' (perceived) general health was captured by the question 'How would you describe your current health status?' (Amez, Vujić, Soffers, & Baert, 2020). Afterwards, three binary variables were constructed, indicating whether students perceived their health as (i) (fairly) bad, (ii) fairly good, or (iii) very good. As sleep quality is shown to be correlated with academic performance (Baert et al., 2015), we surveyed students' sleep by means of the subjective sleep quality component of the validated Pittsburgh Sleep Quality Index (Buysse et al., 1989). Finally, we controlled for students' relationship status by means of a binary variable indicating whether each student was had a significant other.

Finally, we constructed two outcome variables based on the exam results provided by the faculty administration. In line with Baert et al. (2020), our main outcome variable ('average score: completed exams') is the average of the students' results (graded on 20) for all exams sat by them in the observed exam period. The exams that students did not take are left out of this measurement.[7] Our alternative outcome variable ('fraction of exams passed') is constructed by dividing the number of exams the students passed (by obtaining at least 50.0% of the points) by the total number of exams the students sat. The average scores for both outcome variables – presented in Panel E of Table 1 – show significant differences between the subsample of students living in a student room and their commuting peers. On average, students living in student rooms score 11.483 points out of 20 in their exams, while their peers only score 10.727 points. Similarly, commuting students only pass 62.9% of their exams, while students living in student rooms pass nearly 7 out of 10 (69.9%) of their exams. However, this group comparison does not take any selection – both observable and unobservable – into account. Our individual fixed-effects approach allows us to control both for the observable factors listed in Panels B, C and D of Table 1, and for unobservable characteristics that may correlate both with exam results and the decision to live in a student room.

[7] Students might have decided not to participate in exams for courses in which they were enrolled for multiple (unobserved) reasons, such as illness or time constraints.

We analyse this rich longitudinal dataset by means of a fixed-effects estimator. In contrast with analyses of cross-sectional data (see, e.g., Simpson and Burnett, 2019), this allows us to control for unobserved individual characteristics (Verbeek, 2012). Under certain assumptions, our empirical findings can thus be interpreted causally. For example, we assume that non-observed determinants of academic performance are constant over time. Additionally, our fixed-effects approach is limited since it only captures the effect of living in student rooms for those students whose residential status changed during the data gathering. For these reasons, we test our results by means of alternative causal inference methods such as instrumental variable estimation.

3 Results

3.1. Benchmark Analysis

The estimation results of our benchmark analysis are presented in Table 2. In model (1), we apply a pooled linear regression to estimate the association between students' average exam scores and residential status without including any control variable. Next, in model (2), we add the aforementioned time-invariant control variables to the regression. In model (3), we correct for individual fixed effects.[8] In models (4) and (5) we further add the predetermined time-invariant control variables to the pooled linear and individual fixed-effects estimation, respectively. Then, in model (6), the students' exam results are regressed on their residential

[8] As the individual fixed-effects estimator only takes into account variation within-individuals, the coefficients of time-constant variables cannot be estimated.

status while including all control variables. Finally, in model (7), we apply our preferred individual fixed-effects estimator while controlling for all time-varying control variables.

<Table 2 about here >

Depending on the estimation approach, we find substantially different results. All naïve pooled linear regression models yield positive and statistically significant coefficients for living in a student room. Without controlling for any confounding variable (model (1)), we find a strong significant coefficient of living near the university of 0.756. However, when including all control variables (model (6)), we find a positive coefficient that is only borderline significant. In contrast, when we look at the individual fixed-effects estimation results, we find negative coefficients ranging from −0.439 (model (3)) to −0.524 in our preferred model (7). However, these coefficients are not statistically significant. Thus, our empirical results suggest that the effect of living in a student room as found by Reynolds (2020) and de Araujo and Murray (2010) is actually non-existent.

The remarkable differences between our naïve linear regressions and our individual fixed-effects estimate discussed above are suggestive of potential self-selection by students living in a student room. In other words, certain characteristics that are predictors of good exam results might also predict whether students live in a student room. In Table 3, we show the estimation results of regressing students' residential status on all of the control variables introduced in our benchmark analyses. These estimation results might explain why the significance of the coefficient in our linear regression disappear when adding additional control variables. Indeed, when we compare the empirical results of model (4) from Table 3 with those of model (6) from Table 2, we see that (i) not speaking Dutch at home, and (ii) having a well-educated father significantly predict both good exam results and the decision to live in a student room. Additionally, the difference between our linear regression and fixed-effects estimates suggests also a potential self-selection based on non-observed characteristics. In summary, our benchmark analysis supports the idea that living in student rooms does not have any impact on students' exam scores. Nevertheless, the significant difference in exam results as presented in Table 1 (see above) might be explained by the fact that students who are more likely to perform well academically are also more likely to live in student rooms.

<Table 3 about here >

3.2. Robustness checks

First, we reran our benchmark individual fixed-effects model with our alternative outcome variable, namely the fraction of exams passed. The estimation results presented in Table 4 also show negative coefficients. However, in line with our main findings discussed above, these negative coefficients are not statistically significantly different from zero. Therefore, our main findings do not seem to depend on the specific construction of our dependent variable. In other words, living in student rooms does not affect either students' grades or their chances of passing exams.

<Table 4 about here >

Subsequently, we applied a random individual effects estimator to investigate the impact of living near the university. On the one hand, random-effects estimation results can only interpreted causally under stricter assumptions than fixed-effects estimations (Verbeek, 2012). On the other hand, the advantage of such an approach is that the random-effects estimator considers both within- and between-individual variation yielding more efficient estimators (Bell, Fairbrother, & Jones, 2019). The estimation results of this approach are presented in Table 5. In model (1), without controlling for any potential confounding variables, we find that living in a student room is associated with a strong and statistically significant increase in exam results of 0.672 points out of 20. However, when we – in analogy with Table 2 – gradually add control variables to the model, the magnitude of the coefficient decreases and the impact becomes statistically insignificant. Hence, this random-effects approach also supports our main finding that living in student rooms does not have a significant impact on students' exam results.

<Table 5 about here >

Finally, we performed a last robustness check by adopting – in line with de Araujo and Murray (2010) – an instrumental variable approach. In the first stage, students' residential status is predicted by our instrument, namely the straight-line distance in kilometres between the centre of each student's municipality of origin and the centre of the city where their university is located. This is assumed to be uncorrelated with students' academic performance conditional on the students' other adopted characteristics, including paternal educational level and number of siblings. In the second stage, this exogenous prediction is used to estimate the impact of living in student rooms on average exam scores. The coefficient estimates of this approach are presented in Table 6. When controlling for all observed factors, we find a statistically insignificant coefficient similar to our preferred model presented in Table 2. In summary, regardless of the number of control variables included in the model, we find a statistically insignificant coefficient indicating that living in a student room does not affect students' exam results.

<Table 6 about here >

4 Conclusion

With the current study, we contribute to the rather limited literature on the potential relationship between living in a student room and exam results in two major ways. First, we exploit – for the first time – longitudinal data on 1,653 Belgian university students. The longitudinal character of the data allows us to take unobservable individual characteristics into account by means of an individual fixed effects estimator. As a result, our empirical findings can be interpreted causally. Second, while the empirical literature to date has focused on American academic settings, we investigated this relationship in a European context of city universities. We find that there is no relationship between living in a student room and exam results conditional on individual differences. This finding suggests that – with respect to academic performance – neither policy measures that encourage living in a student room nor those that encourage staying at home are necessary or efficient.

We end this study by acknowledging its main limitations. First, although the focus on city universities in Europe does contribute substantially to the existing empirical literature, it might imply that our empirical results are not necessarily generalisable. However, our findings could be – at least – generalised to other (European) countries where tertiary education is similarly organised.

Second, our measure of students' residence status does not allow us to distinguish between types of living arrangement. In the current study, we defined 'a student room' as every independent living arrangement near the university, regardless of whether this room was rented on the private market or rented out by the university. However, since faculty buildings are spread throughout the city, there is no difference in the distance from those rooms to campus. Therefore, factors differentiating student room on and off campus might not be highly relevant in this context.

Third, despite the fact that we exploit rich longitudinal data, we only have multiple observations for 227 students. This limited number might decrease the power of our individual fixed-effects estimator yielding no significant result. However, our benchmark results are confirmed by various robustness checks applying other methods of causal inference. For this reason, both our instrumental variable approach and our random individual-effects estimator yield very similar results indicating that our benchmark model does capture the (absence of a) causal relationship between students' living arrangement and their exam results.

Finally, although we do not find any significant causal impact of living in a student room on exam results, we cannot exclude the possibility that different opposing mechanisms are at work and therefore ruling out any effect. Therefore, future research might try to disentangle different potential mechanisms rather than focus on the general effect on academic performance of living in a student room.

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Table 1. Summary Statistics

	(1)	(2)	(3)	(4)
		Average		
	Full sample N = 1,906	Subsample: Living in a student room N = 646	Subsample: Not living in a student room N = 1,260	Difference: (2) − (3)
A. Residence status				
Living in a student room	0.339	1.000	0.000	1.000***
Distance between home and university	25.440	41.390	17.262	24.127***
B. Time-invariant control variables				
Female	0.539	0.611	0.502	0.110***
Foreign origin	0.167	0.108	0.198	−0.089***
Dutch is not the main language at home	0.089	0.045	0.111	−0.066***
Highest diploma father: no tertiary education	0.372	0.297	0.410	−0.113***
Highest diploma father: tertiary education outside college	0.290	0.316	0.277	0.039*
Highest diploma father: tertiary education in college	0.338	0.387	0.313	0.074***
Number of siblings: none	0.105	0.085	0.115	−0.030**
Number of siblings: one	0.508	0.539	0.492	0.047*
Number of siblings: two	0.275	0.288	0.268	0.020
Number of siblings: more than two	0.112	0.088	0.125	−0.036**
Programme in secondary education: Economics—Languages	0.133	0.099	0.151	−0.052***
Programme in secondary education: Economics—Maths	0.190	0.224	0.172	0.052***
Programme in secondary education: Ancient Languages	0.148	0.173	0.135	0.038**
Programme in secondary education: Exact sciences—Maths	0.146	0.155	0.142	0.013
Programme in secondary education: Other	0.382	0.348	0.400	−0.052**
General end marks secondary education: less than 70%	0.342	0.317	0.355	−0.037
General end marks secondary education: between 70% & 80%	0.532	0.540	0.528	0.012
General end marks secondary education: more than 80%	0.126	0.142	0.117	0.025
Programme: University of Antwerp	0.475	0.317	0.556	−0.238***
C. Predetermined time-varying control variables				
At least one parent has passed away	0.030	0.022	0.035	−0.013
Divorced parents	0.216	0.201	0.224	−0.023
Number of ECTS-credits in programme	22.756	24.360	21.933	2.426***
Retaking at least one course	0.022	0.017	0.024	−0.007
Programme: Ghent University, Business and Economics	0.222	0.324	0.170	0.154***
Programme: Ghent University, Commercial Sciences	0.246	0.289	0.224	0.066***

Programme: Ghent University, Public Administration and Management	0.057	0.070	0.051	0.019*
Programme: University of Antwerp, Business Economics	0.189	0.121	0.224	−0.103***
Programme: University of Antwerp, Economic Policy	0.026	0.015	0.031	−0.015**
Programme: University of Antwerp, Business Engineering	0.029	0.015	0.036	−0.020**
Programme: University of Antwerp, Management Information Systems	0.088	0.048	0.108	−0.060***
Programme: University of Antwerp, Communication Studies	0.033	0.017	0.041	−0.024***
Programme: University of Antwerp, Political Science	0.014	0.011	0.015	−0.004
Programme: University of Antwerp, Social and Economic Sciences	0.067	0.070	0.066	0.004
Programme: University of Antwerp, Sociology	0.023	0.015	0.026	−0.011
Programme: Other	0.007	0.005	0.009	−0.004
D. Time-varying control variables				
Academic motivation scale	4.967	5.000	4.951	0.049*
General health: (fairly) bad	0.042	0.042	0.043	−0.001
General health: fairly good	0.580	0.599	0.571	0.028
General health: very good	0.377	0.359	0.387	−0.027
PSQI subjective sleep quality component	1.914	1.945	1.898	0.047
In a relationship	0.349	0.385	0.331	0.054**
E. Exam Results				
Average score: completed exams	10.983	11.483	10.727	0.756***
Fraction of exams passed	0.653	0.699	0.629	0.071***

Note. See Section 2. for a description of the data. T-tests (continuous variables) and χ2-tests (discrete variables) are performed to test whether the differences presented in Column (4) are significantly different from 0. *** (**) ((*)) indicates significance at the 1% (5%) ((10%)) significance level.

Table 2. Benchmark Analyses: Main Estimation Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Estimation method	OLS	OLS	FE	OLS	FE	OLS	FE
Dependent variable	Average score: completed exams						
Living in a student room	0.756*** (0.159)	0.257* (0.146)	−0.439 (0.387)	0.252* (0.144)	−0.511 (0.389)	0.251* (0.144)	−0.524 (0.376)
Female	-	0.161 (0.145)	-	0.092 (0.146)	-	0.085 (0.148)	-
Foreign origin	-	−0.677*** (0.241)	-	−0.696*** (0.238)	-	−0.665*** (0.235)	-
Dutch is not the main language at home	-	−1.030*** (0.350)	-	−0.982*** (0.340)	-	−0.961*** (0.340)	-
Highest diploma father: tertiary education outside college	-	0.327* (0.171)	-	0.343** (0.168)	-	0.340** (0.169)	-
Highest diploma father: tertiary education in college	-	0.291* (0.176)	-	0.317* (0.174)	-	0.311* (0.172)	-
Number of siblings: one	-	0.296 (0.258)	-	0.247 (0.254)	-	0.235 (0.253)	-
Number of siblings: two	-	0.192 (0.273)	-	0.159 (0.268)	-	0.194 (0.267)	-
Number of siblings: more than two	-	−0.137 (0.321)	-	−0.080 (0.317)	-	−0.038 (0.317)	-
End marks secondary education: between 70% and 80%	-	1.904*** (0.151)	-	1.935*** (0.151)	-	1.927*** (0.149)	-
End marks secondary education: more than 80%	-	3.513*** (0.248)	-	3.639*** (0.249)	-	3.649*** (0.248)	-
Programme: University of Antwerp	-	-0.226 (0.145)	-	0.745 (0.556)	-	0.744 (0.548)	-
At least one parent passed away	-	-	-	0.159 (0.357)	1.374*** (0.088)	0.209 (0.354)	0.830 (0.535)
Divorced parents	-	-	-	−0.258 (0.172)	0.731* (0.442)	−0.248 (0.170)	0.716 (0.441)
Number of ECTS-credits in programme	-	-	-	0.046* (0.026)	0.000 (0.029)	0.038 (0.025)	−0.001 (0.030)
Retaking at least one course	-	-	-	−0.468 (0.290)	0.773* (0.403)	−0.459* (0.273)	0.810** (0.396)
Academic motivation scale	-	-	-	-	-	0.144 (0.114)	−0.108 (0.307)
General health: fairly good	-	-	-	-	-	1.061*** (0.368)	−0.161 (0.970)
General health: very good	-	-	-	-	-	0.981** (0.383)	0.260 (1.078)
PSQI subjective sleep quality component	-	-	-	-	-	0.314*** (0.110)	0.332 (0.208)
In a relationship	-	-	-	-	-	0.011 (0.140)	−0.460 (0.382)
Constant	10.727*** (0.100)	8.748*** (0.280)	11.132*** (0.131)	6.802*** (0.780)	10.983*** (0.739)	4.713*** (0.994)	11.062*** (1.840)
Controls for programme in secondary education	No	Yes	No	Yes	No	Yes	No
Controls for programme in tertiary education	No	No	No	Yes	Yes	Yes	Yes
Fixed individual effects	No	No	Yes	No	Yes	No	Yes
Number of observations	1,906	1,906	1,906	1,906	1,906	1,906	1,906

Note. The presented results are coefficient estimates, with standard errors in parentheses. Standard errors are clustered on the individual level. ***(**)((*)) indicates significance at the 1% (5%)((10%)) significance level.

Table 3. Determinants of living in a student room

	(1)	(2)	(3)	(4)	(5)
Estimation method	OLS	OLS	FE	OLS	FE
Dependent variable			Living in a student room		
Female	0.122*** (0.023)	0.121*** (0.023)	-	0.113*** (0.023)	-
Foreign origin	−0.032 (0.040)	−0.029 (0.040)	-	−0.031 (0.040)	-
Dutch is not the main language at home	−0.111** (0.045)	−0.112** (0.046)	-	−0.114** (0.046)	-
Highest diploma father: tertiary education outside college	0.080*** (0.029)	0.075*** (0.029)	-	0.080*** (0.029)	-
Highest diploma father: tertiary education in college	0.098*** (0.028)	0.090*** (0.028)	-	0.093*** (0.028)	-
Number of siblings: one	0.066* (0.038)	0.062* (0.038)	-	0.064* (0.038)	-
Number of siblings: two	0.074* (0.041)	0.068* (0.041)	-	0.071* (0.041)	-
Number of siblings: more than two	0.045 (0.048)	0.043 (0.047)	-	0.040 (0.047)	-
End marks secondary education: between 70% and 80%	0.021 (0.024)	0.017 (0.025)	-	0.015 (0.025)	-
End marks secondary education: more than 80%	0.064 (0.042)	0.058 (0.042)	-	0.051 (0.042)	-
Programme: University of Antwerp	−0.215*** (0.023)	−0.148 (0.091)	-	−0.161* (0.091)	-
At least one parent passed away	-	−0.041 (0.064)	−0.016 (0.010)	−0.039 (0.065)	−0.039 (0.101)
Divorced parents	-	−0.009 (0.030)	−0.001 (0.016)	−0.014 (0.030)	−0.005 (0.023)
Number of ECTS-credits in programme	-	0.005 (0.004)	0.005 (0.003)	0.004 (0.003)	0.005 (0.004)
Retaking at least one course	-	−0.026 (0.064)	0.072 (0.049)	−0.026 (0.065)	0.074 (0.051)
Academic motivation scale	-	-	-	0.037** (0.019)	0.023 (0.054)
General health: fairly good	-	-	-	−0.038 (0.050)	0.032 (0.110)
General health: very good	-	-	-	−0.097* (0.053)	0.020 (0.114)
PSQI subjective sleep quality component	-	-	-	0.007 (0.017)	−0.004 (0.068)
In a relationship	-	-	-	0.025 (0.024)	0.020 (0.042)
Constant	0.223*** (0.045)	0.142 (0.114)	0.230*** (0.077)	0.015 (0.145)	0.068 (0.251)
Controls for programme in secondary education	Yes	Yes	No	Yes	No
Controls for programme in tertiary education	No	Yes	Yes	Yes	Yes
Fixed individual effects	No	No	Yes	No	Yes
Number of observations	1,906	1,906	1,906	1,906	1,906

Note. The presented results are coefficient estimates, with standard errors in parentheses. Standard errors are clustered on the individual level. ***(**)((*)) indicates significance at the 1% (5%)((10%)) significance level.

Table 4. Alternative Outcome Variable

	(1)	(2)	(3)
Estimation method	FE	FE	FE
Dependent variable		Fraction of exams passed	
Living in a student room	−0.073 (0.054)	−0.083 (0.053)	−0.085 (0.052)
At least one parent passed away	-	0.007 (0.010)	0.023 (0.062)
Divorced parents	-	0.115 (0.090)	0.113 (0.070)
Number of ECTS-credits in programme	-	−0.002 (0.003)	−0.002 (0.003)
Retaking at least one course	-	0.138** (0.062)	0.143** (0.061)
Academic motivation scale	-	-	0.021 (0.035)
General health: fairly good	-	-	−0.009 (.092)
General health: very good	-	-	0.061 (0.101)
PSQI subjective sleep quality component	-	-	0.019 (0.024)
In a relationship	-	-	−0.079* (0.044)
Constant	0.677*** (0.018)	0.751*** (0.080)	0.620*** (0.204
Controls for programme in tertiary education	No	Yes	Yes
Fixed individual effects	Yes	Yes	Yes
Number of observations	1,906	1,906	1,906

Note. The presented results are coefficient estimates, with standard errors in parentheses. Standard errors are clustered on the individual level. ***(**)((*)) indicates significance at the 1% (5%)((10%)) significance level.

Table 5. Random Effects Analyses

	(1)	(2)	(3)	(4)
Estimation method	RE	RE	RE	RE
Dependent variable	Average score: completed exams			
Living in a student room	0.672*** (0.150)	0.202 (0.138)	0.210 (0.139)	0.214 (0.139)
Female	-	0.158 (0.140)	0.083 (0.142)	0.099 (0.144)
Foreign origin	-	−0.695*** (0.232)	−0.725*** (0.230)	−0.698*** (0.228)
Dutch is not the main language at home	-	−1.134*** (0.325)	−1.075*** (0.320)	−1.062*** (0.320)
Highest diploma father: tertiary education outside college	-	0.395** (0.167)	0.410** (0.166)	0.398** (0.166)
Highest diploma father: tertiary education in college	-	0.354** (0.170)	0.391** (0.169)	0.380** (0.168)
Number of siblings: one	-	0.324 (0.248)	0.297 (0.246)	0.295 (0.245)
Number of siblings: two	-	0.269 (0.264)	0.256 (0.263)	0.296 (0.261)
Number of siblings: more than two	-	−0.055 (0.311)	0.018 (0.310)	0.072 (0.310)
End marks secondary education: between 70% and 80%	-	1.884*** (0.146)	1.931*** (0.146)	1.929*** (0.145)
End marks secondary education: more than 80%	-	3.499*** (0.246)	3.668** (0.246)	3.682*** (0.244)
Programme: University of Antwerp	-	−0.368*** (0.141)	1.782*** (0.591)	1.770*** (0.579)
At least one parent passed away	-	-	0.243 (0.349)	0.278 (0.343)
Divorced parents	-	-	−0.242 (0.162)	−0.231 (0.161)
Number of ECTS-credits in programme	-	-	0.017 (0.022)	0.011 (0.021)
Retaking at least one course	-	-	0.374 (0.327)	0.401 (0.316)
Academic motivation scale	-	-	-	0.123 (0.109)
General health: fairly good	-	-	-	0.814** (0.391)
General health: very good	-	-	-	0.806** (0.408)
PSQI subjective sleep quality component	-	-	-	0.324*** (0.100)
In a relationship	-	-	-	−0.093 (0.132)
Constant	10.560*** (0.095)	8.628*** (0.273)	7.474*** (0.678)	5.675*** (0.946)
Controls for programme in secondary education	No	Yes	Yes	Yes
Controls for programme in tertiary education	No	No	Yes	Yes
Random individual effects	Yes	Yes	Yes	Yes
Number of observations	1,906	1,906	1,906	1,906

Note. The presented results are coefficient estimates, with standard errors in parentheses. Standard errors are clustered on the individual level. ***(**)((*)) indicates significance at the 1% (5%)((10%)) significance level.

Table 6. Instrumental Variables Analyses

	(1)	(2)	(3)	(4)
Estimation method	2SLS	2SLS	2SLS	2SLS
Dependent variable	Average score: completed exams			
Instrumental variable	Distance between home and university			
Living in a student room	0.389 (0.289)	−0.427 (0.293)	−0.464 (0.290)	−0.430 (0.291)
Female	-	0.244* (0.136)	0.178 (0.138)	0.162 (0.137)
Foreign origin	-	−0.699*** (0.212)	−0.717*** (0.210)	−0.686*** (0.209)
Dutch is not the main language at home	-	−1.106*** (0.275)	−1.062*** (0.273)	−1.038*** (0.272)
Highest diploma father: tertiary education outside college	-	0.382** (0.162)	0.397** (0.160)	0.395** (0.159)
Highest diploma father: tertiary education in college	-	0.358** (0.159)	0.381** (0.157)	0.374** (0.156)
Number of siblings: one	-	0.341 (0.218)	0.292 (0.217)	0.279 (0.216)
Number of siblings: two	-	0.243 (0.235)	0.208 (0.233)	0.243 (0.233)
Number of siblings: more than two	-	−0.106 (0.279-	−0.049 (0.276)	−0.011 (0.275)
End marks secondary education: between 70% and 80%	-	1.919*** (0.142)	1.948*** (0.141)	1.938*** (0.141)
End marks secondary education: more than 80%	-	3.557*** (0.217)	3.680*** (0.219)	3.684*** (0.218)
Programme: University of Antwerp	-	−0.373** (0.145)	1.788** (0.782)	1.761** (0.778)
At least one parent passed away	-	-	0.130 (0.381)	0.182 (0.379)
Divorced parents	-	-	−0.265 (0.161)	−0.257 (0.160)
Number of ECTS-credits in programme	-	-	0.049** (0.022)	0.041* (0.022)
Retaking at least one course	-	-	−0.487 (0.439)	−0.477 (0.436)
Academic motivation scale	-	-	-	0.169 (0.106)
General health: fairly good	-	-	-	1.036*** (0.319)
General health: very good	-	-	-	0.915*** (0.333)
PSQI subjective sleep quality component	-	-	-	0.319*** (0.102)
In a relationship	-	-	-	0.028 (0.133)
Constant	10.852*** (0.122)	8.901*** (0.266)	6.903*** (0.693)	4.723*** (0.885)
Controls for programme in secondary education	No	Yes	Yes	Yes
Controls for programme in tertiary education	No	No	Yes	Yes
Hausman endogeneity test (p-value)	0.136	0.007	0.005	0.008
First stage: F-test of instrument's joint significance (p-value)	0.000	0.000	0.000	0.000
Number of observations	1,906	1,906	1,906	1,906

Note. The presented results are coefficient estimates, with standard errors in parentheses. Standard errors are clustered on the individual level. ***(**)((*)) indicates significance at the 1% (5%)((10%)) significance level.