High School Never Ends. Normative and Comparative Peer Group Effects on Higher Education Outcomes through the School-level Students’ Expectation Culture.

Laura Van den Broeck (corresponding author) laura.vandenbroeck@ugent.be
Department of Sociology, Ghent University, Korte Meer 5, 900 Ghent, Belgium.

Isis Vandelannote isis.vandelannote@ugent.be
Department of Sociology, Ghent university, Korte Meer 5, 9000 Ghent, Belgium.

Jannick Demanet jannick.demanet@ugent.be
Department of Sociology, Ghent University, Korte Meer 5, 900 Ghent, Belgium.

Mieke Van Houtte mieke.vanhoutte@ugent.be
Department of Sociology, Ghent University, Korte Meer 5, 900 Ghent, Belgium.

Funding: This work was supported by the Research Foundation-Flanders (Belgium) with a personal grant awarded to Laura Van den Broeck (grant number FWO16/ASP/242); and by the Special Research Fund, Ghent University, Belgium (grant number 01N03518)

Word count: 9301 word including tables, excluding references (2648 words)

Acknowledgments: In this article, the Flemish part of the data of the International Study of City Youth (ISCY) was used, which is an international collaborative project designed and implemented by various research partners from across the world. The cities participating in the study are Barcelona (Spain), Bergen (Norway), Bordeaux (France), Ghent (Belgium), Melbourne (Australia), Montréal (Canada), Reykjavik (Iceland), San Diego (US), Santa Barbara (US), Sacramento (US), Santiago (Chile), Tijuana (Mexico), Turku (Finland), and Wroclaw (Poland). The project is led by the Centre for International Research on Education Systems (CIRES) at Victoria University, Australia. We would like to thank all researchers that contributed to this international project. The International Study of City Youth has received funding from various sources. We owe a special thanks to the Australian Research Council, the Victorian Department of Education and Training, and CIRES at Victoria University, Australia.
High School Never Ends. Normative and Comparative Peer Group Effects on Higher Education Outcomes through the School-level Students’ Expectation Culture.

Abstract

Recent research has increasingly been studying the long-lasting effects of secondary education structures and processes on higher education (HE) outcomes. While the influence of socioeconomic composition on higher education enrolment is established, the underlying mechanisms remain unclear. We posit that the composition effect partially runs through the educational expectations of the students’ peers at school. By considering shared post-secondary expectations among students within a school – or, peer expectation culture – we transcend the dominant individual approach to expectations. Additionally, we go beyond the supposed positive (i.e., normative) effects of peers on HE enrolment, by considering the negative effects of having ambitious peers on HE enrolment resulting from comparative group processes. Logistic multilevel analyses of longitudinal data (2013-2019) from 1250 students across 30 Flemish high schools showed that SES composition effects on HE outcomes were mediated by expectation culture. Students attending schools with high expectation cultures were more likely to attend HE in general, and to attend university over other HE institutes compared to students in schools with low expectation cultures. The results suggest normative effects of peers on both outcomes, while comparative processes were only found for the choice of institution. This study underscores the long-term consequences of both individual and school-level expectations in secondary education and calls for including comparative reference group effects in studies on educational decision-making.

Keywords: Educational expectations; school culture, school socioeconomic status, higher education, peer groups; longitudinal studies
Introduction

Although participation in higher education has increased considerably across most OECD countries (OECD, 2019), higher education enrolment is still subject to substantial social inequality (Bernardi and Ballarino, 2016). Socioeconomically disadvantaged students, for instance, remain underrepresented in higher education institutions, especially in the more prestigious ones. The social selection might even be larger within higher education – that is, the kind of institution one attends – compared to general higher education enrolment (Arum, Gamoran, and Shavit, 2007; Reay, 2016). As future returns of education are largest for university degrees than for non-university higher education (OECD, 2014), it is crucial to investigate barriers upon enrolment in higher education, and upon enrolment in universities, versus non-university higher education institutions.

The process of attending higher education is already set in motion in secondary education (Choy, Horn, Nuñez, and Chen, 2000; Hossler, Braxton, and Coopersmith, 1989). Therefore, attention in this article is directed towards barriers within upper-secondary education. In this regard, many studies have focused on the formal/explicit barriers upon higher education enrolment (e.g., tuition costs and admission standards), whereas informal barriers largely remained ‘black boxes’ (Aronson, 2008). Nevertheless, informal barriers may be more important than explicit barriers (Aronson, 2008; Rosenbaum, 1997), especially in educational systems where formal barriers are largely absent (e.g., the Flemish educational system). In this vein, scholars interested in higher education outcomes have been widening their scope of interest to secondary school structures and processes (e.g., Palardy, 2015; Perna and Titus, 2005). Research in the School Effects Tradition (Teddlie and Reynolds, 2000; Reynolds et al., 2014) demonstrates, for instance, that students who have attended secondary schools with a low socioeconomic composition are disadvantaged in terms of higher education enrolment, compared to their counterparts in schools with a high socioeconomic composition (Engberg and
Wolniak, 2010). As the influence of school composition also reflects indirect effects (Thrupp, Lauder and Robinson, 2002), that is, they run through different school processes (see e.g., Creemers and Reezigt, 1999 on the context-input-process-output model), it is necessary to investigate these processes to understand why the secondary schools’ socioeconomic composition affects higher education enrolment.

Within the renowned school effectiveness research tradition – in which this study is embedded – processes have often been conceptualised in terms of school culture (Van Houtte and Van Maele, 2011). Specifically, school culture has become a key factor to explain the association between mostly structural input factors and educational outcomes (Van Houtte, 2005; Van Houtte and Van Maele, 2011). Hence, investigating school cultures can shed some light on why the socioeconomic school composition affects higher education enrolment. In this regard, research has increasingly highlighted the college-going culture of schools – that is, the extent to which enrolling in college is promoted and normalized (Robinson and Roksa, 2016). Scholars have identified high post-secondary educational expectations – that is, the educational level secondary school students expect to attain – as a crucial part of the college-going culture (Bryan, Farmer-Hinton, Rawls, and Woods, 2017; Farmer-Hinton 2011). Studies on college-going cultures especially emphasize the importance of teachers’ and counsellors’ expectations about specific students to capture the normative framework that supports higher education enrolment. However, despite that students are primarily influenced by their peers during adolescence (Brown and Larson, 2009), the role of peer group expectations for the college-going culture is mostly neglected. Nevertheless, because students within a school are confronted with the same social reality, they tend to develop similar attitudes (Van Houtte and Stevens, 2010). As a result, these attitudes are likely to be shared within schools and may form the normative framework within a school, which affects all students. Indeed, research showed that youth’s educational careers are affected by peer group expectations (Engberg and Wolniak, 2010; Palardy, 2015;
Trinidad, 2018). Hence, a crucial part of the college-going culture is neglected when shared expectations – or peer expectation culture – are not investigated.

More specifically, investigating expectations as a school attribute is imperative since fundamental factors driving social inequality in higher education enrolment are overlooked when features of the secondary school context are neglected (Sackett, Kuncel, Arneson, Cooper, and Waters, 2009). Therefore, this study investigates whether peer expectation cultures in secondary schools affect higher education enrolment. The few studies that do investigate peer expectations on enrolment focus on the normative effects of these groups, thereby emphasizing the positive effects of being surrounded by ambitious students (Engberg and Wolniak, 2014; Palardy, 2015; Trinidad, 2019). The underlying assumption of expectations in a college-going culture is that students conform to the college-going norm at school (Bryan, et al., 2017). However, peers do not only exert positive normative effects. Although largely neglected by previous expectations research, reference group theory states that students are affected by their peers through comparative effects as well (Marsh et al., 2014; Merton and Kitt, 1950) – that is, by comparing themselves with more successful peers, students might experience relative deprivation and thus make the choice to enrol in higher education less readily. As such, this study questions the assumption that attending schools with ambitious fellow students has a singular positive effect.

Additionally, given that expectations depend on the school context (Dupriez, Monseur, Van Campenhoudt, and Lafontaine, 2012), we investigate whether peer expectation culture explains socioeconomic composition effects upon higher education enrolment. This study adds to our understanding of why socioeconomic composition of the secondary school affects higher education enrolment and choice of institution, and extends research on college-going cultures, by focusing on student and school-level peer expectations. Specifically, this study investigates whether the expectation culture affects higher education enrolment. In doing so, we consider
both normative and comparative effects of attending schools with ambitious expectation cultures on higher education enrolment and institutional choice.

The Significance of (Peers’) Educational Expectations

Since the 1960s, students’ own educational expectations are broadly acknowledged to predict educational decisions and attainment, by the Wisconsin model (Sewell et al., 1969) as well as rational choice models (Morgan, 2005; see Zimmerman, 2020). In fact, different theoretical models on college enrolment identify students’ post-secondary expectations in secondary education as the first step towards higher education enrolment (Hossler et al., 1989; Perna, 2006). Empirical research, furthermore, confirms that post-secondary expectations affect higher education enrolment (Bates and Anderson, 2014; Hill and Wang, 2015; Trinidad, 2018). While initial studies mostly looked at students’ aspirations – the education a student desires to attain –, later research showed expectations – the education one expects to attain – to be a better predictor of enrolment (Hanson, 1994). However, substantial social inequality in educational expectations is found, according to gender, ethnicity, and SES (Sewell et al., 2003; Trebbels, 2015). Although differences in terms of gender and ethnicity have shrunk in recent years (see Parker et al., 2016), longitudinal research confirmed lasting substantial effects of SES, with low SES youth having less ambitious expectations than high SES youth (Schoon and Parsons, 2002). Because expectations links students’ background with future educational attainment, these attitudes are considered to be a way to understand the processes of social reproduction and mobility (Mello, 2009).

In the formation of these expectations, significant others have an important role to play (Buchmann and Dalton, 2002; Sewell et al., 2003; Roth, 2017). Notwithstanding the impact of parents’ expectations that has been shown by a plethora of studies (Gregory and Huang, 2013; Zhang et al., 2011), especially in adolescence, peers become the primary influencer (Brown and Larson, 2009). Studies often refer to Coleman’s (1961) pioneering work “The adolescent
society” for showing how peers steer the socialization taking place within the school context. Peers have a dual function: they are *modellers* by serving as examples, as well as *definers* by explicitly encouraging fellow students and setting expectations (Woelfel and Haller, 1971). While the former results from observing fellow students, the latter can be coupled with the popular notion of “peer pressure” (Pristein, Brechwald, and Cohen, 2011), by which certain beliefs and behaviours are encouraged or discouraged. More recently, information exchange has been acknowledged to be an important third mechanism through which socialization occurs (Ryan, North, and Ferguson, 2019). Peers are, next to parents and teachers, the primary source of information about higher education for 9th graders (Bell, Rowan-Kenyon and Perna 2009; Hossler, Schmit, and Vesper, 1999).

Although peers’ expectations are regularly included in the research on educational expectations of secondary school students (Buchmann and Dalton, 2002; Roth, 2017), only a few studies focus on lasting secondary school peer effects after matriculation, such as peer effects on higher education enrolment (Bedsworth, Colby, and Doctor, 2006; Sokatch, 2006) and choice of institution (Fletcher, 2012). Nevertheless, the process of attending higher education is already set in motion in secondary education. Secondary school peers who influence the student’s educational expectations, also influence whether the student eventually will attend higher education, or not (Hallinan and Williams, 1990). Thus, peers play an essential role in the transformation of expectations into actions. Studies support that the students’ indicated number of secondary school friends expecting to attend higher education influences students’ enrolment (Engberg and Wolniak, 2010, 2014). These latter studies on secondary school effects on higher education outcomes usually frame peer effects within the umbrella concept of social capital (Coleman, 1988). The relationships among peers are seen as a valuable resource for information that can be deployed in the decision-making process. Especially relations with high SES fellow
students create important information channels that support higher education attendance (Bell et al., 2009; McDonough, 1997).

**Pitfalls in Research on Peer Expectations**

Studies on peers’ expectations, including the studies on social capital, have mostly dealt with students’ (closest) friend(s) (Sewell et al., 1969; Wolniak and Engberg, 2010; Zimmerman, 2020). The concept of “peers”, however, has been described as rather vague with multiple definitions, varying from one single best friend to all same-aged fellow students (Brown and Larsson, 2009). Limiting the study of peer effects to immediate friendship networks, however, hampers the research on peer effects in two ways, which can be solved by looking at all same-aged fellow students. First, in research on educational expectations, a discrepancy can be found between definitions of peers used in compositional studies on expectations and research on the influence of peers’ expectations. In school composition research, all same-age fellow students are traditionally included by taking the mean of students' background or ability (Reynolds et al., 2014; Teddlie and Reynolds, 2000). By contrast, when the influence of an important peer attitude – expectations – is explicitly researched, only best friends seem to matter. This discrepancy hinders the establishment of an explicit empirical link between the compositional influences of the student body – a structural school feature –, and the attitudinal influences of peers’ expectations as a school process. Nevertheless, the peer group creates a social context where attitudes and decisions are formed (Ryan, 2000). In the same vein, Ryan (2000) discussed the lack of consideration about whether or not the experiences regarding norms, values, and standards are shared within the peer group – that is, the peer group creates a social context where attitudes and decisions are formed. Second, the exceptions that look at expectations at the school level, within literature focusing on secondary school effects on higher education (Engberg and Wolniak, 2010, 2014; Palardy, 2015) and within the college-going culture literature specifically (Oakes, 2003; Bryan et al., 2017; Farmer-Hinton, 2010), use students
and/or teachers’ and counsellors’ perceptions of students’ expectations. Measurements of peer effects are predominantly based on students’ perceptions of their friends’ plans and not on actual reports by peers themselves, which has been acknowledged as a methodological issue in peer effects research (Ryan, 2000; Van Houtte and Van Maele, 2011). Specifically, using students’ reports of their peers’ attitudes exaggerates similarity with friends because of shared method variance (see e.g., Demanet and Van Houtte, 2012) and this leads to an overestimation of peer effects (Kandel, 1985).

Transcending Traditional Peer Effects Research

1. From an Individualistic Account to Student Culture

In this article, we transcend the dominant individualistic view on peer influence present in peer effects studies on expectations and higher education outcomes. We argue that not only close friends’ expectations but also expectations of the wider social context matter in terms of socialization. This idea is not new: peers’ attitudes are often included in research into school climate (e.g., the measurement developed by Brand et al., 2003). However, also in school climate research, perceptions of peers’ attitudes are used. As a response to the issues related to the use of perceptions of peers’ attitudes (see above), educational researchers consider the concept of student culture, which stresses the shared character of students’ own beliefs, assumptions, and meanings, as more appropriate (see Van Houtte, 2005). Researchers have examined different school-wide peer cultures based on different student attitudes, such as the school futility culture (Van Houtte and Stevens, 2010) or gender role culture (Van Houtte and Vantieghem, 2020). With this in mind, we expand upon the idea of the importance of peers’ expectations for students’ educational decision-making to a school-wide peer expectation culture, based on fellow students’ self-reported expectations. Recently, Trinidad (2018) called the mean level of expectations of all same-grade students in a school “collective expectation”.

9
However, we prefer to use the term school expectation culture to make an explicit link with this previous literature on school cultures.

Specifically, dominant expectations among students within a school form a normative framework, which affects individual behaviour (Wilson, 1959). According to reference group theory (Merton and Kitt, 1950), peers act as normative reference groups that impose norms and values. In other words, when students are enrolled in secondary schools with a high expectation culture, a normative framework is established that favours higher education enrolment. Such a framework exerts pressure upon individual students to conform to the norm of higher education enrolment. Therefore, in line with the results of Trinidad (2018), we hypothesize that attending secondary schools with a higher expectation culture leads to higher chances to enrol in higher education.

2. **Expectation Culture as a Mediator of School Composition Effects**

Furthermore, this effect of normative peer expectations at the school-level can be seen as an explanation for socioeconomic composition effects upon higher education enrolment and program selection. It has been argued that expectations reflect the empirical realities that students are confronted with (Hanson, 1994; Morgan, 2005). The socioeconomic composition is one such empirical reality. Low socioeconomic status schools, for instance, are associated with lower opportunity structures, which is recognized by the students attending these schools (Demet et al., 2019). Because all students within a school are embedded within the same structural and normative context, they tend to develop similar attitudes and expectations (Demet and Van Houtte, 2011). Moreover, given that one of the main functions of education, and hence, of schools, pertains to the socialization of students, students become socialized in line with the school’s normative framework (Biesta, 2020; Kerckhoff, 1976). In addition, groups exert pressure so that group members take on the group values and expectations (Schein,
1984). Consequentially, students develop similar attitudes in line with the school norm, and behave accordingly (see Van Houtte, 2005). Schools are, thus, likely characterized by different expectation cultures, which align with the socioeconomic school composition. In fact, the proportion of students planning to attend college (i.e., expectation culture) even was a proxy for SES composition in the Coleman report (1966). As such, in line with the longstanding idea that individual SES effects are mediated by peers’ expectations (Sewell et al., 1969), we may expect that socioeconomic composition effects on higher education enrolment are mediated by the expectation culture.

3. **The Neglected Negative Effect of Ambitious Peers**

Within the dominant socialization framework sketched above, ambitious fellow students have singular encouraging effects upon higher education enrolment and program choice, and non-ambitious peers exert a one-sided discouraging influence, that is, research only considers peers as a normative reference group (Rosenqvist, 2018). However, reference group theory (Merton and Kitt, 1950) identifies comparative effects as the second type of peer influence, which refers to peers being taken as a yardstick to which students compare themselves (Kelley, 1952). The process of comparing oneself with his/her peers is especially relevant in the transition from secondary to tertiary education. This transition goes hand in hand with a changing social environment which elicits uncertainty in students (Yair, 2007). Students can reduce uncertainty by engaging in social comparison with their peers (Dreeben and Barr, 1988) and peers’ expectations are a particularly valuable source of information (Morgan, 2005). Qualitative research brought to light that students compare their educational expectations with the expectations of their peers and that this comparison influences educational decision-making (Brooks, 2005).
Following reference group theory (Merton and Kitt, 1950), comparing one’s position with the position of peers might result in feelings of relative deprivation or relative gratification (see Davis, 1959; Marsh et al., 2014). When one’s own educational expectations are higher than the expectations of most peers one is surrounded by at school, the student perceives relative gratification towards the reference group. By contrast, relative deprivation refers to a situation in which the student finds him/herself when the comparison turns out negative. In this case these students judge their own expectations lower than that of the group, and they might perceive their peers as a better fit for higher education. These students might, therefore, be less likely to enrol in higher education. Students’ enrolment decisions, thus, depend on the social context of the school – that is, the same educational expectations can lead to different educational decisions depending on the expectation culture of the group. Consequentially, one could say that, for students whose comparisons turn out negative, the expectation culture at school limits their opportunities to start higher education, and university. This of course has repercussions for their future, as enrolling in universities hold major advantages in future life outcomes (e.g., health and income), hence, they are being deprived of better futures.

Such reasoning is in line with the best-known application of comparative reference group theory, the frog pond theory (Davis, 1966) or big-fish-little pond theory (Marsh and Parker, 1984; Marsh et al., 2014). The frog pond theory builds upon this idea with peers’ achievement as an indicator, to explain why equally able students expect less in schools with higher achievement levels. However, Brooks (2005) had brought to light that the explicit and subtle peer rankings, which students make in the comparison process to make educational decisions, are not solely based on achievement. Students more often list school attitudes than school performance as positively influencing their educational decisions (Looker, 1997). For example, some high achieving students did not show the ambition researchers expected from them based upon their achievement. Instead these students placed themselves at a lower rank, because they
did not have the social support and knowledge of the higher education system as others at their school. Another relevant factor is the effort peers exhibit: higher-achieving fellow students exhibiting a lot of effort were not necessarily placed higher in ranks. Students’ expectations, reflecting not only achievement but also attitudes and resources, are therefore an interesting information source for students.

In this regard, British research revealed that expectations of fellow students are an interesting source to decide which institutions do, or do not “fit” (Foskett, Maringe, and Lumby, 2003). Whether one turns his/her expectations into reality will partially depend on the characteristics of his/her peers. Extending this line of research, we argue that students with ambitious expectations are less likely to realize their expectations if they attend secondary schools with high peer expectation cultures, compared to their counterparts in schools with low expectation cultures. In other words, students who expect (university) enrolment in schools with lower expectation cultures, are more likely to experience relative gratification which enhances their actual (university) enrolment, compared to their counterparts in high expectation cultures. Thus, although the concept of relative deprivation is mostly applied in reference to the income or social class of the reference group (Smith, Pettigrew, Pippin, and Bialosiewicz, 2012), it can also be applied to other parameters, for example, the ability of peers – as is exemplified by the frog pond effect (Davis, 1966) or big-fish-little-pond effect (Marsh and Parker, 1984) – or as we state, the expectations of peers. It remains an open question whether these hypotheses concerning school effects on both higher education outcomes, based on an established theory of the 1950s to explain school effects on student outcomes, hold in a current context of a massification, or even universalism (Trow, 2007), of higher education.

**The Current Study**
This study adds to the existing literature in several ways. First, this study transcends the individual view on expectations, by investigating expectations as a school feature – that is, by researching the role of the school-wide expectation culture. Second, this study directs attention towards both normative and comparative peer group effects. Third, this study further adds to our understanding of how secondary school composition affects higher education enrolment and institution choice by investigating whether expectation culture explains socioeconomic school composition effects on higher education outcomes. This study is furthermore conducted in the Flemish educational system, which is a particularly interesting research setting. Specifically, school effects in highly-tracked systems, as is the case in the Flemish educational system, are typically high (Teddlie and Reynolds, 2000). Structures and processes of the secondary school may, thus, be even more important in determining higher education and institutional choice in this education system, than in more comprehensive ones (De Clercq, Galand, and Frenay, 2017). Furthermore, especially in systems where objective measures – such as centralized standardized testing – are absent, self-evaluation tends to be based on a comparison with fellow students (Davis, 1966). As Festinger (1954) explained in his social comparison theory, in particular when objective parameters are not available, people evaluate their own opinions and abilities by comparison. Since the Flemish higher education system is characterized by open access (see context-section), only requiring a secondary school degree upon higher education enrolment, we might expect that especially in this context, the realization of students’ expectations depends upon the general expectations of peers at school.

Based on the reference group theory the following three hypotheses are formulated.

**H1:** Regardless of individual expectations, if students attend secondary schools with high expectation cultures, these students will be more likely to (a) enrol in higher education versus not enrolling in higher education, and (b) attend university institutions versus other non-university higher education institutes specifically (i.e., normative group effects).
**H2:** If students with high individual expectations attend secondary schools with high expectation cultures, these students will be less likely to enrol in (a) higher education and (b) university institutions, compared to their counterparts in schools with low expectation cultures (i.e., comparative group effects).

**H3:** Peer expectation culture at school mediates SES composition effects.

**Study Setting**

As education in Belgium is the jurisdiction of the regions, we will discuss briefly the relevant characteristics of the education system of Flanders, the northern, Dutch-speaking part of Belgium where this study takes place. The secondary education system is highly tracked, with tracking starting officially at the age of 14. In reality, however, students get sorted in tracks at the age of 12 (Boone and Van Houtte, 2013). Students and their parents choose themselves among the tracks, with a choice between four tracks: academic, technical, arts and vocational. The tracks are widely regarded as forming a hierarchy, with the academic track as the most prestigious one, and the vocational track as the less demanding choice (Stevens and Vermeersch, 2010). After completing 12th grade, students of every track receive a secondary school diploma, except for vocational students who need to attend an extra year if they want to attend higher education. Awarding the certificate of secondary education is the responsibility of the secondary school, where teachers are in charge of designing and conducting exams in their classes in line with official state requirements for attainment levels and competences. No centrally administered standardized testing takes place in secondary education, so students have no overall benchmark against which they can measure themselves up to.

Since the implementation of the Bologna declaration (1999), students entering Flemish higher education face the choice between university and non-university higher education institutions. The former institutes offer academic bachelors, that serve as a preparation for a study at the
masters level, exclusively offered by universities. The latter offers the more practical, professional bachelors, which includes apprenticeships, and prepares students towards a specific job, although bridging programs can be followed to pursue a masters’ program at university (Education, Audiovisual, and Culture Executive Agency, 2012). Specifically, in a society where the academic is deemed as more prestigious than the practical (Van Houtte and Stevens, 2010), attending university is coupled with a higher status and higher wages, compared with other institutes of higher education (OECD, 2014). In Flanders, universities or institutes of higher education are not ranked (cf. elite institutes in the US and UK), registrations costs are low, and no differences in the registration fee exist following the subsidization of both public and private institutions. As higher education is open for everyone with a secondary school diploma, and no admission tests, interviews, or application letters are in order (except for medicine and some arts programs), looking at the difference between university and other HE institutes is the only way one can study status differences on the level of institutes.

Methods

Data

This study used data from the International Study of City Youth (ISCY), a longitudinal study in 14 cities (www.iscy.org) which tracks one cohort of 10\textsuperscript{th} graders over a period of five years. For the current study, longitudinal data from the first and last survey of Ghent, Belgium, were used. All secondary schools in Ghent (\(n = 39\)) were contacted, of which 30 participated (response rate: 76.92\%). In the first wave (2013-2014), every 10\textsuperscript{th} grader present at school was asked to fill in the survey (\(N = 2346\)). In the fifth wave (2018-2019), three years after the expected secondary school graduation for those without school delay, all initial participants were contacted again. Merging both waves resulted in valid data of 1250 students across 30 schools (see Table 1 for descriptive statistics).
As is common with longitudinal data, attrition occurred between survey waves. Attrition was the largest among non-natives, that is all students whose maternal grandmothers are from non-Western-European descent (See variables section). Only 44.34% of the non-natives who participated in the baseline, participated again in the fifth wave, compared to 75% of the natives that participated again. The attrition rates among students with low socioeconomic backgrounds (attrition: 42.68%) were roughly the same as for students with high socioeconomic backgrounds (attrition: 44.62%). Attrition was smaller among females (attrition: 28.30%) than males (attrition: 40.04%). Lastly, participation rates differed between tracks as well. Attrition was the largest among students who attended the vocational track. Compared to the baseline, only 28.03% of the students who attended the vocational track, participated again in the fifth wave. In comparison, 67.95% of the students in academic tracks participated again in the fifth wave. It seems that attrition was patterned according to ethnicity and track. To minimize the impact of selective attrition, ethnicity, socioeconomic status, gender, and track were controlled for (see analytic strategy).

**Analytic Strategy**

Because of the nested data structure, that is, students (level 1) are nested within schools (level 2), multilevel analyses (MLwiN) were most appropriate. Before starting the multilevel analyses, we analysed the missing data. Descriptive analyses showed that none of the variables had more than 10% missing data. Only 1.82% of all data was missing, and no specific patterns were found (i.e., if students had missing data, it was most often only on one indicator). Secondary school graduates must decide whether to enrol in higher education and if they do, they face the choice between university or non-university higher education institutions. Therefore, it is necessary to conduct two separate, binomial logistic two-level analyses: (1) students who were enrolled in higher education (coded 1) were compared to those who were not (coded 0); (2) students enrolled in university (coded 1) were compared to those enrolled in
non-university higher education institutes (coded 0). Both analyses shared the same sequential model build-up. In the first model, we tested the role of socio-economic school composition, while controlling for ethnic composition at the school level, together with individual-level socio-demographic control variables (gender, SES, ethnicity, tracks, and math ability). Subsequently, to test whether expectation culture has normative effects on higher education enrolment and institutional choice, expectation culture was added in model 2A. By adding expectation culture to the model, it was possible to investigate whether the school’s expectation cultures mediated socioeconomic composition effects. To confirm that the results for the expectation culture holds, individual expectations were controlled for in model 2B. In order to test the comparative effects of schools’ expectations cultures, interaction effects between expectation culture and individual expectations were entered in the third model. The fourth model investigated whether these effects hold when controlling for ability and ability composition. Lastly, a major structuring feature of the Flemish educational system is tracking. Moreover, it is expected that in rigidly tracked systems with open-access higher education, track placement will have implications for students’ post-secondary careers (Declerq and Verboven, 2010). Therefore, the results were controlled for track in a fifth model. All metric variables were grand-mean centred for model stability.

**Measurements**

**Outcomes**

The measure for enrolment indicated whether students attended higher education (85.2%) four years after the baseline survey (wave 5), meaning they were proceeding at the normal pace through the educational system. For students who indicated that they enrolled in higher education, further analyses were carried out on the attended institution. This variable indicated whether students attended non-university higher education institutions (49.0%) or university
(51.0%) (see Table 1), three years after secondary education (i.e., for those who progressed regularly through secondary education).

*Individual-level Predictors*

Student expectations were assessed by asking the students in 10th grade “After leaving secondary school, what do you plan to do?” (wave 1). Students indicated whether they planned on going to university, going to a college of higher education, getting a job, starting a family, or taking care of children, or did not know yet. These answers were reduced to four categories, namely: attending university (45.9%), non-university higher education institutions (24.9%), did not expect to attend higher education (6.6%), or did not know whether they wanted to attend higher education (23.1%). While students who are uncertain about their future trajectory – those who indicate the option “don’t know” – are traditionally omitted from analyses, being considered as missings, we follow recent work that emphasizes how these students deserve more attention in research (Perez-Felkner, 2015; Schoon, Gutman, & Sabates, 2012). Having uncertain educational expectations may have long detrimental effects, such as prolonged schooling careers without earning a bachelor’s degree (Sabates, Harris, & Staff, 2011).

*Socio-economic status (SES)* was measured by the highest occupational status of both parents, as measured in wave 1. Occupations were coded by the International Socio-Economic Index (ISEI-08), which also takes parents’ highest educational level and income into account (Ganzeboom, 2010) (mean = 60.85; SD = 21.52).

As is common in Dutch and Flemish research (Timmerman, Hermans, and Hoornaert, 2002), students whose maternal grandmothers were born in Belgium were considered *natives* (85.3%), whereas students whose maternal grandmothers were born abroad were considered *migrants* (14.7%; wave 1). Our sample, furthermore, contained 38.1% *male* students (wave 1).
Students’ ability was measured as math achievement, as math achievement in secondary school has long-term effects on higher education enrolment (Spielhagen, 2006). Students were asked to solve 56 questions about a range of mathematical problems. Scores were standardized based on the sample of Ghent. Because of attrition between surveys, the mean and standard error slightly deviate from 0 and 1 respectively (mean = 0.20; SD = 0.97; wave 1).

The measure for track indicated whether students attended the academic (67.0%), arts (8.7%), technical (15.2%), or vocational track (8.7%). This variable is based on the attended track in the fifth (wave 2) or sixth grade (wave 3), because, in Flanders, track changes are not allowed in the last two years of secondary education. By combining these waves, the number of missings decreased.

School-level Predictors

Because of attrition in the last wave, we based our school-level variables on the first wave of data collection (2013-2014). Since secondary school features at the school level are relatively steady throughout the years (Teddlie and Reynolds, 2000), using baseline variables depicted the school context accurately.

Three school composition variables were considered. First, SES composition was measured by calculating the mean of the individual SES scores of students per school (mean = 53.21; SD = 13.60) (Opdenakker and Van Damme, 2001). Second, the ethnic composition was depicted by the percentage of ethnic minority students at school (mean = 32.59; SD = 27.82), based on the individual ethnicity of students (Van Houtte and Stevens, 2009). Third, the ability composition was controlled for. This was measured by calculating the mean of the individual math test scores per school (mean = -0.20; SD = 0.59).

The measure for the culture of peer expectations was based on the proportion of students with specific expectations per school. To accurately fit the outcomes of the separate analyses (see
analytic strategy), we investigated the peer expectation culture in two ways. First, the *culture of higher education expectations* was measured by the percentage of students that expected to attend higher education per school (mean = 58.39; SD = 23.02). We used this measure in the analyses taking enrolment in higher education as the outcome. Second, the *university-going culture of expectations* was measured by the percentage of students expecting to attend university per school (mean = 33.80; SD = 23.79). Since the expectations have to be specifically related to the outcome under study, we included this measure in the second round of analyses, taking program choice into account.

[Table 1 near here]

**Results**

**Higher Education Enrolment**

First, an unconditional (null) model was estimated to test whether multilevel analyses were appropriate. The results showed that the between-school variance in higher education enrolment was significant (Table 2; OR = 13.613; p < 0.01) which warranted multilevel analyses. Although it is common to decompose the variance in a between-school and within-school component, it is strictly speaking not meaningful to determine the amount of level 2 variance in multilevel logistic regression, because of the low variation in dichotomous outcomes (Frost, 2007; Lee and Burkham, 2002).

Model 1 indicated that the socioeconomic composition of the secondary school positively affected higher education enrolment three years after secondary school graduation (OR = 1.069; p < 0.01). Interestingly, the socioeconomic composition of the school affected higher education enrolment, even when controlled for individual ability (OR = 1.121; p > 0.05) and ability composition (OR = 6.959; p < 0.001). In model 2A, expectation culture was added to the analysis. Peers’ expectation culture positively affected higher education enrolment: students
who attended secondary schools with high expectation cultures were more likely to attend higher education compared to their counterparts in secondary schools with low expectation cultures ($OR = 1.031; p < 0.01$). By adding expectation culture to the model (model 2A), the SES composition’s coefficient turned insignificant, which suggested that schools’ expectation cultures mediate composition effects on higher education enrolment (Baron and Kenny, 1986). This mediation effect was further supported by a formal analysis, using the method proposed by Hayes (2012, 2017). This method allows us to account for both direct and indirect effects, and uses bootstrapping tests which are more powerful than a regular Sobel test (Hayes 2009, 2012, 2017). Results from this analysis showed that the indirect effect of the SES composition on higher education enrolment, via schools’ expectation cultures was significant at the 5% level ($OR=1.0455$; $BootLLCI=0.0306$; $BootULCI=0.0597$), thereby confirming the third hypothesis. However, when individual expectations were accounted for (Model 2B), the results demonstrated that schools’ expectation culture affected higher education enrolment through the individual expectations of students. As a result, expectation cultures did not significantly affect higher education enrolment when individual expectations were controlled for ($OR = 1.019; p > 0.05$). The results furthermore indicated that individual expectations affected higher education enrolment. Specifically, the odds for enrolling in higher education for students that did not expect to attend or did not know whether they expected to attend higher education in tenth grade, were respectively 9.43 ($OR = 0.106; p < 0.001; 1/0.106$) and 2.46 ($OR = 0.446; p < 0.01; 1/0.446$) times lower, compared with their peers that expected to attend higher education. Moreover, these two categories differed significantly from each other as well ($p < 0.001$), meaning that students who did not expect to attend higher education were less likely to be enrolled than students who did not know whether they expected to attend higher education.

In the third model, interaction terms were added to investigate the comparative effects of the expectation culture. None of the interaction terms were significant, which disproved the
hypothesis that peers serve as a comparative reference group in relation to higher education enrolment.

Lastly, the odds to enrol in higher education for students in technical, arts and vocational tracks, were respectively 2.91 ($OR = 0.344; p < 0.05; 1/0.344$), 4.18 ($OR = 0.239; p < 0.01; 1/0.239$), and 16.95 ($OR = 0.059; p < 0.001; 1/0.059$) times lower, compared with their peers in academic tracks. Moreover, when track placement was entered in the model, the effects of individual expectations were reduced, suggesting that the expectations of students are partially determined by their track placement, except for those who do not know what to expect.

[Table 2 near here]

**Higher Education Institution Choice**

Similar to the first analysis, an unconditional (null)model was estimated to ensure that multilevel analyses were appropriate, which was the case (Table 3; $OR = 4.545; p < 0.01$).

In model 1, the results demonstrated that the choice to attend university versus other institutes of higher education is significantly affected by the SES composition of the secondary school ($OR = 1.092; p < 0.001$). Students who attended high SES composition schools were more likely to attend university compared to their counterparts in low SES composition schools. Additionally, having attended a secondary school with a high ability composition, regardless of individual ability, positively affected the likelihood of attending university ($OR = 2.349; p < 0.01$).

In the next model, when expectation culture was added, the effect of SES composition was reduced, which points towards mediation (Baron and Kenny, 1986). Additional mediation analyses were carried out to formally investigate mediation. Using the method of Hayes (2012, 2017), we can confirm that the indirect effect of SES composition on university attendance, via schools’ expectation culture is significant at the 5% level ($OR = 1.051; BootLLCI=0.0323$;
Having attended a secondary school with a high expectation culture regarding going to university, positively affected actual enrolment in university three years after graduating from secondary education ($OR = 1.025; p < 0.01$). The effect of expectation culture was slightly reduced when it was controlled for individual expectations, but it remained borderline significant ($OR = 1.016; p < 0.07$). The results further showed that individual expectations affected enrolment in universities as well. Specifically, the odds to attend university for students who expected to go to non-university higher education institutions in tenth grade were 2.80 times lower compared to their peers who expected to enrol in university ($OR = 0.357; p < 0.001; 1/0.357$). Similarly, the odds to attend university for students who did not know what to expect in the tenth grade were 2.19 times lower compared with students who expected to enrol in university ($OR = 0.455; p < 0.01; 1/0.455$).

In model 3, interaction effects were added to test comparative reference group effects of expectations cultures. Of all three interaction effects, only the interaction between individual expectations for attending a non-university higher education institution and an expectation culture was significant ($OR = 0.964; p < 0.001$). These results demonstrated that the negative effect of expecting to go to non-university higher education institutions versus university for university enrolment was strengthened if these students attended a secondary school with a high expectation culture. In other words, students who were expecting to go to non-university higher education institutions were less likely to attend university if they attended secondary schools with high expectation cultures, compared to their peers in low expectation cultures. Note that the odds for students that expect no higher education were very high, though still insignificant. This finding is due to the small number of students in this category. Crosstabs showed that, of all students indicating that they were not expecting higher education enrolment, only 19 did eventually enrol in higher education (17 in non-university higher education, and 2 in
university). Therefore, this finding is not a statistical error, but rather shows that expectations are good predictors of later enrolment.

In model 4, it was investigated whether these results hold when track is controlled for. Although adding tracks slightly reduced the effect of expectation culture, it was still significant \( (OR = 0.030; p < 0.01) \). The effect of individual expectations stayed similar as in model 3, meaning that, regardless of the attended tracks, students who expected to enrol in non-university higher education institutions \( (OR = 0.516; p < 0.01) \), or students who did not know what to expect \( (OR = 0.583; p < 0.05) \) are significantly less likely to attend university. The interaction effect found in model 3 stayed similar as well, which demonstrated that comparative effects are found regardless of track \( (OR = 0.954; p < 0.001) \). However, by adding tracks to the analysis, the interaction term between expectation culture and not knowing what to expect after secondary education became significant \( (OR= 0.976; p<0.05) \). Students who do not have clear expectations in schools with high expectations are even less likely to attend university, compared with their counterparts in schools with low expectation cultures. Similar to the previous analysis (table 2), having attended a technical track lowers the odds of being enrolled in university significantly \( (OR = 0.254; p < 0.001) \). The vocational track was not included in this analysis since none of the students who attended a vocational track was enrolled in a university, hence, there was no variance for the vocational track. While students who attended the arts track were significantly less likely to attend higher education, for the students who did enrol in higher education, students in arts tracks were not significantly less likely to attend university, compared with their peers in academic tracks.

[Table 3 near here]

Discussion
People with tertiary education degrees – especially those with university degrees - on average have better jobs, earn more (OECD, 2014) and live longer (OECD, 2013) compared with lower educated individuals. Attending higher education is, thus, crucial for many facets of one’s future. The decision to start in higher education is made while young people still attend secondary education (McDonough, 1997), making research on determining secondary school structures and processes interesting both for scientific and policy reasons. Nevertheless, it is only since the 2000s that a research line on higher education outcomes has emerged that looks at secondary school processes to understand the long-term effects of school structures, such as school composition (Palardy, 2015; Perna and Titus, 2005; Wolniak and Engberg, 2010). This study adds to this line of research in two ways. First, this study investigates normative and comparative effects of school-wide peer expectations, thereby bringing in the role of school peers in the creation of a college-going culture. Moreover, our focus transcends traditional peer effects studies on higher education by looking at school-wide peer expectations, which makes it possible to link peer effects with school composition. This study focused on the expectation culture as an underlying mechanism of socioeconomic composition effects on higher education enrolment and institutional choice. Second, we go beyond the traditional socialization vision which emphasizes one-sided positive effects of ambitious peers, by determining whether having more ambitious peers at school curbs students’ own ambition of attending higher education, and the more prestigious institutions therein.

We inspected whether students are enrolled in higher education three years after the expected graduation date from secondary education, and the kind of institution they attend, differentiating between high-status university programs versus other less prestigious institutes of higher education. The results seem to confirm that differentiation does occur between higher education institutions, rather than merely attending higher education versus not attending higher education (Davies and Hammack, 2005, Reay, Crozier and Clayton, 2010), which underscores the
importance for future research to distinguish between these different educational choices. We find that, for both outcomes, SES composition of the secondary school matters, regardless of individual SES, ability, and ability composition of the school. This SES composition effect is explained by peer expectation culture. Interestingly, the role of secondary schools’ expectation culture differs across outcomes. Regarding higher education enrolment, the effect of expectation culture runs through the individual expectations of students. At the same time, expectation cultures affect institutional choice beyond individual expectations. Specifically, students who are surrounded by peers who expect to attend university are more likely to be enrolled in university versus other higher education institutions five years later, regardless of individual expectations. The fact that the expectation culture had no significant effect on higher education enrolment, above and beyond individual expectations, might be the result of the current college-for-all era. Attending higher education has become the norm in many Western societies (Rosenbaum, 2011), and according to Arnett (2004), the period of being a student in higher education occupies a specific part in the life course phase of emerging adulthood. As a result of these normative effects in the larger society, students across different schools expect to attend higher education in a similar way (Rosenbaum, 1997). In other words, the normative effect of wider society might be making the normative effect of the peer community in secondary school less relevant. Moreover, in an open-access tertiary education system – as applied in Flanders –, students can easily act upon their expectations, which results in higher education enrolment.

However, having ambitious fellow students in secondary school is not per se an ideal situation when it comes to choosing a higher education institution. Students who expect to attend non-university higher education, but are enrolled in schools with high expectation cultures (i.e., most school peers are expecting university attendance), are even less likely to attend university, compared to their peers who are enrolled in schools with low expectation cultures.
Underscoring comparative reference group effects (Davis, 1966; Pettigrew, 2015; Richer, 1976), these results suggest that students with not so ambitious individual expectations in secondary schools with ambitious peers experience more relative deprivation than their counterparts in schools with low expectation cultures, which leads them to make less ambitious choices. However, whereas being surrounded by ambitious peers is especially detrimental for those who have less ambitious expectations themselves, the opposite is true for those having ambitious expectations. Attending schools with high expectation cultures, compared to attending schools with low expectation cultures, increases the odds to enrol in university for students who expect to attend university themselves. The relevance of expectations also shows at the individual level: students’ expectations in tenth grade influence their post-secondary position five years later. The fact that expectations at the individual and school level align with students’ actual higher education attendance, partially contradicts ongoing concerns about expectations not being predictive for educational success (Jerrim, 2014; Rosenbaum, 2001). Interestingly, not having clear expectations seems consequential for future higher education outcomes: students who do not know what to expect in tenth grade are less likely to attend higher education. When these students do attend higher education, they are less likely to attend university. As such, our results highlight that the category of “don’t knowers” deserves more attention, as this category is still often neglected in research (Schoon, Gutman, & Sabates, 2012).

Moreover, the results demonstrate that individual expectations matter beyond track placement – that is, tracking only partially determines students’ tenth-grade expectations in Flanders. Despite the high expectations of some students in vocational tracks in tenth grade (Van den Broeck, Demanet and Van Houtte, 2018), none of them attend university five years later. Our findings, thus, contradict the popular notion that tracking provides clear futures for their students (Rosenbaum, 2001). This notion is mostly found in American literature and
specifically argues that in more stringent forms of tracking, as occurring in some European countries, students would be allocated to separate postsecondary pathways unequivocally. In addition, given that vocational track students with high expectations are less likely to be enrolled in higher education, specifically in universities, our results suggest that an open access tertiary system does not result in an automatic translation of expectations into a reality. Even in low cost, open access tertiary education systems, students face barriers upon higher education enrolment and institutional choice.

Before addressing the consequences of these results for educational policy, some limitations have to be addressed. Using longitudinal data enabled us to investigate secondary school effects on higher education enrolment. Nevertheless, as is common in longitudinal studies, some attrition occurred between survey waves. Attrition was mostly structured along ethnicity and track lines. To limit the effect of this attrition on the results, these characteristics were controlled for. Nevertheless, our current results may underestimate the social inequality in higher education. For instance, if all students who had attended the vocational track would have participated again, the negative effect of vocational track placement for higher education enrolment is expected to be larger, as students within these tracks are prepared for the labour market. Second, the sample is based on students who attended secondary education in a city with one university and multiple non-university higher education institutions, meaning that the proximity of higher education institutions might reduce barriers upon enrolment (Turley, 2009). By contrast, many smaller cities and rural areas have no higher education institutions. Nevertheless, given that the secondary school affects higher education enrolment, even in such an urban context, it means that the effects of secondary schools might be underestimated here. On the other hand, school segregation is more prevalent in urban areas, and American research has shown how the expectation culture of the secondary school plays a long-term role for urban students but not for students from rural environments (Trinidad, 2019). While our study was
conducted in an urban setting (i.e., Ghent), we do not expect large differences in Flanders, as this part of Belgium is one of the most urbanized regions in Western Europe (Poelmans and Van Rompaey, 2009). Lastly, this study focused on peer expectation culture to explain socioeconomic composition effects. However, future qualitative research is recommended to fully understand how the expectations of same-aged peers within a school as normative and comparative reference groups can influence the educational decision-making process. In addition, composition effects encompass not only peer group processes but also instructional and school organizational and management processes (Thrupp, et al., 2002). As such, our study only partially explained socioeconomic composition effects, and more research is needed to fully understand the long-term effects of the secondary school’s socioeconomic composition.

As for policy implications, firstly, educational policymakers may wish to rethink the timing of student guidance towards higher education enrolment. Student guidance in Flanders is focused on students in the senior year, whereas student expectations of the tenth grade already significantly affect higher education outcomes. Expediting student guidance is especially important for students who are in doubt in tenth grade, given that these students are less likely to attend higher education after secondary education. Secondly, in order to increase higher education enrolment and reduce social inequality enrolment among all groups, policymakers have often focused on raising expectations among students in secondary school (Spohrer, 2011). Despite the positive effect of having high expectations on attending higher education, and university in particular, raising individual expectations is not sufficient to raise participation rates in higher education, as is demonstrated by the unrealized expectations of vocational track students. Furthermore, the peer expectation culture in a given school affects higher education enrolment decisions. In this regard, American researchers have recently demonstrated that the school context is a crucial determinant for students’ post-secondary pathways (Engberg and Wolniak, 2010). Specifically, schools are encouraged to create college-going cultures, thereby
establishing a normative framework that supports higher education enrolment among students, teachers, and counsellors (Robinson and Roksa, 2016). However, policy makers should keep an eye on which schools provide such a college-going culture to guarantee equality of opportunity. High socioeconomic status schools are associated with more ambitious expectation cultures compared to low socioeconomic status schools. Given that these ambitious expectation cultures determine the post-secondary pathways of students, social segregation between schools exacerbates social inequality in higher education between students who attended different secondary schools. Consequentially, if policymakers want to establish ambitious expectation cultures – or college-going cultures – they might want to reduce social segregation by encouraging a socially mixed student-intake at schools. Although establishing college-going cultures is desirable, policymakers have to be aware that such college-going culture among students, as reflected in high expectation cultures, might have additional reverse effects: less ambitious students or students without clear expectations in schools with high expectation culture might develop feelings of relative deprivation. As a result, these students risk not fully reaching their academic potential conclusion, this study is also as they attend less prestigious institutions. As such, underscoring Davis’ (1966) “challenging the notion that getting into the “best possible” school is the most efficient route to […] mobility” (p.31-32).

References


Zhang, Y., Haddad, E., Torres, B., & Chen, C. (2011). The reciprocal relationships among parents’ expectations, adolescents’ expectations, and adolescents’ achievement: A two-

Table 1: Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean (SD) or percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attending higher education</td>
<td>1250</td>
<td></td>
</tr>
<tr>
<td>Attending higher education</td>
<td>1065</td>
<td>85.2%</td>
</tr>
<tr>
<td>Not attending higher education</td>
<td>185</td>
<td>14.8%</td>
</tr>
<tr>
<td>Institution type</td>
<td>1017</td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>519</td>
<td>51.0%</td>
</tr>
<tr>
<td>Non-University higher education college</td>
<td>498</td>
<td>49.0%</td>
</tr>
<tr>
<td><strong>Individual-level predictors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectations</td>
<td>1218</td>
<td></td>
</tr>
<tr>
<td>Expect university</td>
<td>559</td>
<td>45.9%</td>
</tr>
<tr>
<td>Expect non-university higher education college</td>
<td>298</td>
<td>24.5%</td>
</tr>
<tr>
<td>Expect no higher education</td>
<td>80</td>
<td>6.6%</td>
</tr>
<tr>
<td>Do not know</td>
<td>281</td>
<td>23.1%</td>
</tr>
<tr>
<td><strong>Individual-level control variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES</td>
<td>1209</td>
<td>60.85 (21.52)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>1236</td>
<td></td>
</tr>
<tr>
<td>Native</td>
<td>1054</td>
<td>85.3%</td>
</tr>
<tr>
<td>Immigrant</td>
<td>182</td>
<td>14.7%</td>
</tr>
<tr>
<td>Gender</td>
<td>1241</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>473</td>
<td>38.1%</td>
</tr>
<tr>
<td>Female</td>
<td>768</td>
<td>61.9%</td>
</tr>
<tr>
<td>Ability</td>
<td>1206</td>
<td>0.20 (0.97)</td>
</tr>
<tr>
<td>Tracks</td>
<td>1150</td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>771</td>
<td>67.0%</td>
</tr>
<tr>
<td>Technical</td>
<td>175</td>
<td>15.2%</td>
</tr>
<tr>
<td>Artistic</td>
<td>100</td>
<td>8.7%</td>
</tr>
<tr>
<td>Vocational</td>
<td>104</td>
<td>9.0%</td>
</tr>
<tr>
<td><strong>School-level predictors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES composition</td>
<td>30</td>
<td>53.21 (13.60)</td>
</tr>
<tr>
<td>Ethnic composition</td>
<td>30</td>
<td>32.59 (27.82)</td>
</tr>
<tr>
<td>Expectations culture (HE enrolment)</td>
<td>30</td>
<td>58.39 (23.02)</td>
</tr>
<tr>
<td>Expectations culture (HE institution)</td>
<td>30</td>
<td>33.80 (23.79)</td>
</tr>
<tr>
<td>Ability composition</td>
<td>30</td>
<td>-0.20 (0.59)</td>
</tr>
</tbody>
</table>
Table 2: Results for binomial logistic multilevel analyses for higher education enrolment in higher education (1) versus not enrolling in higher education (0)

<table>
<thead>
<tr>
<th></th>
<th>Null model</th>
<th>Model 1</th>
<th>Model 2A</th>
<th>Model2B</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>5.083***</td>
<td>7.561***</td>
<td>7.783***</td>
<td>13.224***</td>
<td>13.343***</td>
<td>22.399***</td>
</tr>
<tr>
<td><strong>School-level predictors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES composition</td>
<td>1.069**</td>
<td>1.022</td>
<td>1.012</td>
<td>1.012</td>
<td>0.989</td>
<td></td>
</tr>
<tr>
<td>Ethnic composition</td>
<td>1.018°</td>
<td>0.997</td>
<td>0.997</td>
<td>0.997</td>
<td>1.007</td>
<td></td>
</tr>
<tr>
<td>Ability composition</td>
<td>6.959***</td>
<td>3.529**</td>
<td>3.626**</td>
<td>3.758**</td>
<td>3.459*</td>
<td></td>
</tr>
<tr>
<td>Expectation culture (HE)</td>
<td>1.031**</td>
<td>1.019</td>
<td>1.013</td>
<td>1.013</td>
<td>1.004</td>
<td></td>
</tr>
<tr>
<td><strong>Individual-level predictors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES</td>
<td>1.019***</td>
<td>1.019***</td>
<td>1.016**</td>
<td>1.016**</td>
<td>1.017*</td>
<td></td>
</tr>
<tr>
<td>Ethnicity (ref.=Native)</td>
<td>0.843</td>
<td>0.865</td>
<td>0.684</td>
<td>0.684</td>
<td>0.538</td>
<td></td>
</tr>
<tr>
<td>Gender (ref.=male)</td>
<td>2.578***</td>
<td>2.354***</td>
<td>2.241***</td>
<td>2.234***</td>
<td>2.314***</td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>1.121</td>
<td>1.111</td>
<td>1.054</td>
<td>1.055</td>
<td>0.826</td>
<td></td>
</tr>
<tr>
<td><strong>Expectations (ref.=university)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-university HE</td>
<td></td>
<td></td>
<td></td>
<td>0.638</td>
<td>0.698</td>
<td>0.931</td>
</tr>
<tr>
<td>No HE</td>
<td></td>
<td></td>
<td></td>
<td>0.106***</td>
<td>0.114</td>
<td>0.289</td>
</tr>
<tr>
<td>Do not know</td>
<td></td>
<td></td>
<td></td>
<td>0.446**</td>
<td>0.421**</td>
<td>0.533</td>
</tr>
<tr>
<td><strong>Tracks (ref.= academic)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.344*</td>
<td></td>
</tr>
<tr>
<td>Arts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.239***</td>
<td></td>
</tr>
<tr>
<td>Vocational</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.059***</td>
<td></td>
</tr>
<tr>
<td><strong>Interaction terms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectation culture*Non university HE</td>
<td></td>
<td></td>
<td></td>
<td>1.014</td>
<td>1.013</td>
<td></td>
</tr>
<tr>
<td>Expectation culture*No HE</td>
<td></td>
<td></td>
<td></td>
<td>1.009</td>
<td>1.026</td>
<td></td>
</tr>
<tr>
<td>Expectation culture*Do not know</td>
<td></td>
<td></td>
<td></td>
<td>1.001</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td><strong>Random Part</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School variance</td>
<td>23.058***</td>
<td>1.085</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Notes: Due to space limitations only odds ratios are presented. Beta coefficients and standard errors are available upon request *.p<0.07 *. p<0.05; **. p<0.01; **. p<0.001.
<table>
<thead>
<tr>
<th></th>
<th>Null model</th>
<th>Model 1</th>
<th>Model 2A</th>
<th>Model 2B</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intercept</strong></td>
<td>0.498**</td>
<td>0.618**</td>
<td>0.653**</td>
<td>1.051</td>
<td>0.868</td>
<td>1.126</td>
</tr>
<tr>
<td><strong>School-level predictors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES composition</td>
<td>1.092***</td>
<td>1.044°</td>
<td>1.046*</td>
<td>1.048*</td>
<td>1.039</td>
<td></td>
</tr>
<tr>
<td>Ethnic composition</td>
<td>1.014</td>
<td>0.997</td>
<td>1.001</td>
<td>1.000</td>
<td>1.003</td>
<td></td>
</tr>
<tr>
<td>Ability composition</td>
<td>2.349</td>
<td>1.067</td>
<td>1.223</td>
<td>1.246</td>
<td>1.161</td>
<td></td>
</tr>
<tr>
<td>Expectation culture (University)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Individual-level predictors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES</td>
<td>1.008°</td>
<td>1.008°</td>
<td>1.007</td>
<td>1.007</td>
<td>1.005</td>
<td></td>
</tr>
<tr>
<td>Ethnicity (ref.= native)</td>
<td>1.350</td>
<td>1.323</td>
<td>1.067</td>
<td>1.051</td>
<td>1.070</td>
<td></td>
</tr>
<tr>
<td>Gender (ref.= male)</td>
<td>1.270</td>
<td>1.219</td>
<td>1.297</td>
<td>1.353°</td>
<td>1.226</td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>1.390***</td>
<td>1.374***</td>
<td>1.328***</td>
<td>1.319**</td>
<td>1.290**</td>
<td></td>
</tr>
<tr>
<td><strong>Expectations (ref.= University)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-university higher education</td>
<td>0.357***</td>
<td>0.408***</td>
<td></td>
<td>0.516**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No higher education</td>
<td>0.340</td>
<td>206.232</td>
<td>37.826</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>0.455***</td>
<td>0.517**</td>
<td></td>
<td></td>
<td>0.583*</td>
<td></td>
</tr>
<tr>
<td><strong>Track (ref.= Academic)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.206***</td>
<td></td>
</tr>
<tr>
<td>Arts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.703</td>
<td></td>
</tr>
<tr>
<td><strong>Interaction terms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectation culture*Non-university HE</td>
<td>0.964***</td>
<td>0.954***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectation culture*No HE</td>
<td></td>
<td></td>
<td>1.391</td>
<td>1.236</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectation culture*Do not know</td>
<td>0.990</td>
<td>0.976*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Random Part</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School variance</td>
<td>4.545**</td>
<td>1.042</td>
<td>1.018</td>
<td>1.011</td>
<td>1.022</td>
<td>1.031</td>
</tr>
</tbody>
</table>

Notes: Due to space limitations, only odds ratios are presented. Beta coefficients and standard errors are available upon request. °: p<0.07; *: p<0.05; **: p<0.01; ***: p<0.001.