

Who aspires to higher education? Axes of inequality, values of education and higher education aspirations in secondary schools in Luxembourg and the Swiss Canton of Bern

Andreas Hadjar¹ | Jan Scharf² | Tina Hascher³

¹Department of Social Sciences, Institute of Education and Society, University of Luxembourg, Esch-sur-Alzette, Luxembourg

²Department of Educational Governance, DIPF Leibniz Institute for Research and Information in Education, Frankfurt am Main, Germany

³Institute of Education, University of Bern, Bern, Switzerland

Correspondence

Andreas Hadjar, Department of Social Sciences, Institute of Education and Society, University of Luxembourg, 11 Porte des Sciences, L-4366 Esch-sur-Alzette, Luxembourg.

Email: andreas.hadjar@uni.lu

Abstract

This article reports a study that investigated secondary school students' higher education aspirations (towards university studies, ISCED 6 and above) and how these differ between student groups as well as how these are impacted by values of education. Panel data of more than 300 secondary school students in two countries, Luxembourg and Switzerland (the Swiss Canton of Bern) was analysed. Schools are structured differently in the education systems of Luxembourg and the Swiss Canton of Bern. The results of our analysis show that students in the Luxembourgish sample more often aspire to higher education than in the Swiss sample. Disparities in higher education aspirations were also more pronounced in the Luxembourgish sample, boys and students from families of low socio-economic status (SES) were less likely to aspire to higher education. While the effects of values of education are generally scarce, stimulation in terms of anticipated enjoyment and interest derived from participation in higher education seems to have a positive effect on higher education aspirations.

1 | INTRODUCTION

The major driver of the decision to follow a higher education pathway is educational aspirations. While the role of aspirations is well studied (Becker & Hecken, 2009; Schindler & Lörz, 2012), inequalities in aspirations—particularly inequalities beyond the social dimension such as status and class—and drivers of aspirations, are under-researched issues. This also applies to values of education that include both monetary and non-monetary benefits attributed

to education in general. The general background thesis of this research is that students' perceptions about the obtained benefits from education are highly relevant for many aspects of educational attainment. Perceived educational benefits are linked to concrete attitudes and motivation (Mickelson, 1990), and they function as frames that structure decisions and behaviour. According to widely used conceptual foundations of inequality research, such as Boudon's (1974) concept of primary and secondary effects or the rational action theory of educational decision-making (e.g., Becker, 2003; Breen & Goldthorpe, 1997), perceived benefits of education predict inequalities in educational attainment as these group-specific perceptions constitute group-specific academic motivation and aspirations.

The present study relates to higher education aspirations regarding study programmes (BA, MA and PhD) at tertiary education institutions (level 6 and above in the International Standard Classification of Education, ISCED). Short-cycle tertiary or post-secondary vocational programmes are not included in this higher education category. Our research centres on the concept of values of education as a crucial factor for participation in higher education. Research in values of education so far have focused mainly on labour market outcomes. In our study, we expand on previous notions of the benefit of schooling in terms of a wider range of values as outlined in the social production function (SPF) theory (Lindenberg, 1996; Ormel et al., 1999). According to the application of the SPF theory to education, values of education can be differentiated into stimulation (interest and enjoyment), comfort (fulfilment of material needs), status (prestige), behavioural confirmation (meeting the expectations of family and other reference groups) and affection (emotional relationships, social networks). The aims of our study were fourfold:

1. To describe the extent to which secondary school students in Years 7, 8 and 9 adhere to higher education aspirations.
2. To explain disparities in higher education aspirations between groups of secondary students in Years 7, 8 and 9 that differ by social origin, gender and immigrant background.
3. To explain how different values of education relate to higher education aspirations.
4. To compare two distinct education systems and relate the results to the specific school contexts in both country settings.

We compared the secondary education systems of Luxembourg and of the Swiss Canton of Bern. This appears to be meaningful, as the secondary education system is governed on the country level in Luxembourg and the canton level in Switzerland. Although the education systems of Luxembourg and the Swiss Canton of Bern are both classifiable as stratified education systems, they differ in their degree of stratification. Whilst the education system of Luxembourg is highly stratified, with three different school tracks and further differentiation, secondary education in the Swiss Canton of Bern is characterised by selection into an upper-secondary educational pathway at a later stage. Which pathway students take is a complex decision based on the teachers' evaluation of the students' performance, input from parents and—particularly for later educational decisions—the students' perspective on education.

We have analysed quantitative data from the international project "School Alienation in Switzerland and Luxembourg" (SASAL) that involves panel data of more than 300 secondary school students in each country setting who were followed from Year 7 to Year 9 (three waves). Aspirations that pertain to education are in this period of adolescence adapted (and often "cooled down") in terms of becoming more realistic, as students gain a clearer picture of their skills and the different paths within the education system (Walkey et al., 2013).

2 | EDUCATIONAL ASPIRATIONS AND VALUES OF EDUCATION

According to conceptual considerations and empirical evidence (e.g., Becker, 2003; Stocké, 2007), differences in perceived benefits of education shape educational aspirations. This leads to a mechanism behind educational

inequalities related to social origin (cf. Neugebauer & Schindler, 2012), gender (cf. Breen et al., 2010) and immigrant background (cf. Kristen & Dollmann, 2010; Van de Werfhorst & Van Tubergen, 2007). Different aspirations for education based on different perceptions are also linked to values (and attitudes) towards education, which are rooted particularly in family socialisation processes.

2.1 | A general framework to analyse inequalities

The theory of primary and secondary effects (Boudon, 1974) provides a general framework for analysing the inequality of educational opportunity and is widely applied in empirical studies (e.g., for inequalities in the transition to tertiary education see Becker & Hecken, 2009; Neugebauer & Schindler, 2012; Schindler & Lörz, 2012). While the framework was originally applied to inequalities related to social origin, contemporary studies also apply the theory to ethnic (e.g., Kristen & Dollmann, 2010) and gender inequalities. With *primary effects of social origin*, Boudon (1974) specifies achievement differences attributed to social inequalities. Accordingly, the variation in school achievement depends on cultural practices and resources in families, such as school-related cognitive, motivational and behavioural skills acquired through socialisation. This is found in studies on school success with upper middle-class students performing better in school as well as in studies on perceived success probabilities (Erikson & Jonsson, 1996). *Secondary effects of social origin* relate to educational decisions. Decisions in choice-driven education systems (Jackson et al., 2012) are related to status positions in the social strata. Based on cost-benefit considerations, choices of higher education tracks and, in particular, the choice of entering higher education depend on the group-specific value assigned to education. Following Breen and Goldthorpe (1997), upper social classes use higher education levels to achieve status maintenance. In explaining (and operationalising) the benefit of education, rational choice approaches mainly stress labour market outcomes (cf. Becker, 2003; Stocké, 2007).

2.2 | Disparities in educational aspirations

Aspirations towards specific pathways in education are closely linked to educational decisions in terms of secondary effects (Boudon, 1974) and must be distinguished from more general educational orientations, as aspirations express a concrete motivation (Mickelson, 1990). While desirable educational goals are considered idealistic aspirations, realistic aspirations reflect individual restraints and opportunities in education (Haller, 1968). Disparities in educational aspirations by social origin (Sewell et al., 1969) appear to be a major (and stable) finding in sociology with regard to higher education (see Becker & Hecken, 2009). A large body of research (e.g., Jackson et al., 2012; Kristen & Dollmann, 2010; Van de Werfhorst & Van Tubergen, 2007) shows higher education aspirations (and higher enrolment rates) among students with an immigrant background in many European countries. Conceptual explanations relate this finding to the immigrants' striving for structural integration, the *attitude-achievement paradox* (Mickelson, 1990) and a specific immigrant optimism. As the educational motivation of women increases with improving labour-market chances (Breen et al., 2010) along other societal changes towards more gender equality, educational aspirations of women are often higher than those of men.

2.3 | How values of education shape educational aspirations

According to the general rational approaches to inequalities in education introduced above (Becker, 2003; Boudon, 1974; Erikson & Jonsson, 1996), education pathway decisions depend on the benefits and costs of education, the utility of education for status maintenance as well as future success probabilities (and thus former achievement).

As the values assigned to education are reflected in the benefit dimension (Becker, 2003), they are expected to play an important role in educational decisions and shape educational aspirations. According to classical rational choice approaches (Becker, 2003), this benefit is linked to highly material outcomes, primarily in terms of income and labour market prospects. However, studying at a tertiary education institution may also be motivated by reasons that go beyond monetary aspects. Following Bourdieu (1984), aspiring to university studies can be rooted in habitus reasons as the values of education are part of a class-specific habitus. In terms of incorporated cultural capital, values of education are transmitted within families (Bourdieu, 1986) like socialisation-based knowledge and competencies. Along with the unequal distribution of resources among families, group-specific habitus is one of the main mechanisms behind inequalities in terms of systematic achievement differences (Bourdieu & Passeron, 1977), as the (competing) value systems of social groups may not correspond with education systems or specific institutions (such as upper secondary general or higher education institutions). Following this rationale, students from academic families can align with their class habitus, gain distinction, meet like-minded fellows and reproduce academic networks when studying at a university, even when the financial returns from university education may not always exceed those of educational pathways below university level (Backes-Gellner & Geel, 2014). Furthermore, since student groups structured along certain axes of inequality assign different values to education, these values may function as an underlying mechanism of educational inequalities.

Based on the assumption that individuals strive not only for monetary, but also non-monetary goals, as outlined in SPF theory (Lindenberg, 1996; Ormel et al., 1999), the values of education approach, which is applied here, conceptualises these values along the five instrumental goals in SPF theory. These goals are used by individuals for achieving physical and social well-being (Ormel et al., 1999, p. 66ff).

Applied to education (and more precisely to schooling), *stimulation* represents activation and arousal in school and describes an intrinsic value: Enjoyment in learning activities is perceived as stimulating. *Comfort* as a benefit resulting from education is, in contrast, of an extrinsic nature: In a short-term perspective, schooling provides a pleasant environment and is not perceived as an obstacle for physical well-being (owing to the educational effort). In a long-term perspective, education is connected to future (monetary) life opportunities. Linked to earlier notions of educational benefits (e.g., Becker, 2003), social *status* is a positional good connected to educational credentials and reflects social approval and is (via income) empirically closely linked to the comfort dimension. A further extrinsic value of education, *behavioural confirmation*, concerns meeting the expectations—and also aspirations—of families, peers and other socialisation agents as well as of oneself. The dimension of *affection* relates to social interactions in school; thus, school as a positive emotional setting is also understood as a value of education for school students.

Considering the links between values and aspirations, perceiving a value in *stimulation* may lead to aspiring to higher education paths due to a positive perception of learning. Valuing the *affection* dimension of schooling also relates to a positive view on the learning setting and may go along with higher education aspirations. The same may apply to (future) material *comfort* and social *status*, as these are major outcomes of higher education credentials (Becker, 2003); and to *behavioural confirmation*, as familial educational aspirations are expected to be a major driver of aspiring to higher education (Becker & Hecken, 2009).

3 | THE EDUCATION SYSTEMS OF LUXEMBOURG AND THE SWISS CANTON OF BERN

Educational values and aspirations are linked to institutional embeddedness in contexts of education. Conceptual considerations and empirical research indicate that education systems shape the level of educational inequality. Stratified school systems that are characterised by early school-type tracking (external differentiation) and only low permeability are prone to social inequalities in school achievement and attainment. In such systems,

secondary effects are more powerful for encouraging transitions to higher tracks in families with a privileged background (Schindler & Lörz, 2012). High vocational specificity, i.e., a dual system, amplifies these mechanisms (Bol & Van de Werfhorst, 2013), so that less privileged students tend to refrain from aspiring to higher education and studying at a university (Becker & Hecken, 2009). This social selectivity is assumed to be impacted by values of education.

The education contexts of Luxembourg and the Swiss Canton of Bern frame the present study. Both have stratified education systems; students are assigned to secondary school tracks after six years of primary education, taking into account school recommendations and parental choices. Secondary education in Luxembourg is highly stratified and prone to inequalities with three distinct general secondary school tracks in an academic track and several vocational tracks. Similarly, the Swiss education system is itself differentiated and characterised by inequalities (Buchmann et al., 2016). Swiss students are also assigned to at least two different tracks. Compared to Luxembourg, the school setting in the Canton of Bern, however, is more heterogeneous including types of comprehensive schooling. Furthermore, decisions about attending upper secondary academic or vocational education are not taken before Grade 8 (Morinaj et al., 2017).

In comparison to Luxembourg, the canton-specific Swiss education systems offer more internal differentiation and flexibility for track changes in Years 7–9. However, permeability in both country settings often relates to downward changes. Both settings offer limited opportunities to attend vocational post-secondary or even higher education later in life after graduation from vocational secondary education pathways. However, in Switzerland such pathways are more common than in Luxembourg. Generally, students in Switzerland may less often aspire to higher education as the prospects of educational pathways below university studies are perceived as good. In Luxembourg, however, degrees obtained at the highest vocational track may lead to higher education and studying at higher education institutions (abroad or in Luxembourg), while upper secondary general education may be more strongly perceived as the ideal way to income and success in Luxembourg with its large service sector.

4 | METHODOLOGY

This study on educational aspirations is based on a three-waves panel dataset of the research project “School Alienation in Switzerland and Luxembourg” (SASAL, 2015–2019) which examines the development of attitudes, behaviour and achievement among Swiss and Luxembourgish school students in primary and secondary schooling. Focusing on higher education aspirations, the sample for this study included secondary school students from Luxembourg ($N = 387$; t_1 : 57.4% boys; $M_{\text{age}} = 12.7$ years [$SD = .64$]) and from the Swiss Canton of Bern ($N = 403$; t_1 : 44.3% boys; $M_{\text{age}} = 13.0$ years [$SD = .54$]), who took part in all three waves in Years 7 to 9. Both samples were selected purposively. As information on the respective populations is not available for many characteristics (like socio-economic status distribution in a full secondary school student population), our data base remains unweighted for the analyses. However, we controlled for major sources of bias and characteristics that may be different between the two countries such as gender, socio-economic status (SES) and immigrant background.

Students filled in a paper-and-pencil survey in their classroom; the selection of school classes covered all regular school tracks from academic to general (vocational) and, in the case of Luxembourg, a preparing track (Morinaj et al., 2017). The demographic structure of the Luxembourgish dataset differs from the Swiss data. Gender, social origin (class) and immigrant background were included in the analysis models to account for these differences.

Educational aspirations were measured with the question “Which degree would you like to achieve?”. This question was placed directly after questions on perceived achievement and which school track students would like to go to if they could change their school track. In light of the framing of the question, and as aspirations may have changed after the transition to secondary education, the responses were expected to relate to realistic educational aspirations. The response categories included tertiary education pathways—such as studies at a

university of applied sciences—and pathways that do not go beyond upper secondary general or upper secondary vocational education in the Luxembourgish and the Swiss questionnaires (i.e., upper secondary general, upper secondary vocational, post-secondary and compulsory secondary pathways). The categories were consolidated into three: (0) undecided (“do not know”, “does not matter”), (1) a secondary general or vocational degree (below tertiary education), and (2) a tertiary education degree (university degree).

To capture four different dimensions of the values of education, students were asked to evaluate 22 items on a four-point Likert scale (from 1/disagree to 4/agree). This scale had been developed and validated by an international project team. Similar to the values-of-children approach (Nauck, 2014), the concept of values was operationalised by highlighting the importance—or in some cases the appraisal—of being good/bad. Items were introduced with the phrase “Going to school...”. Responses relevant to the dimension *stimulation* (3 items), were e.g., “[...] is important because I learn new things” and “[...] is bad because it is boring” (inverted). Responses relevant to the dimension *comfort/status* (4 items), were e.g., “[...] is important to earn more money later (in life)” and “[...] is important to have my own house later (in life)”. Responses relevant to the dimension *behavioural confirmation* (3 items), were e.g., “[...] because my parents want it” and “[...] because everyone does it”. Responses relevant to the dimension *affection* (3 items), were e.g., “[...] is important because there are people who understand me” and “[...] is important as I meet nice people and friends there”. All sub-scales show good to very good internal consistencies with Cronbach's Alpha values ranging between .60 and .74 for the 3–4 item scales at the different time points in the different settings. Considering the extent secondary school students adhere to different values of education, the values of stimulation and comfort or status appear to be more important than affection.

Individual characteristics in terms of axes of inequality were operationalised as follows. *Gender* was operationalised as a dichotomous variable with a category for boys and a category for girls; following a screening of classrooms this conventional categorisation was seen as adequate and as one that would avoid students becoming distracted from the survey. *Social origin* relates to the highest educational and occupational level of students' parents. A class variable was coded on the basis of student information on their mothers' and fathers' education level (university degree or lower) and current or former occupations. The outcome is a variable that follows a collapsed Erikson et al. (1979) class schema: “upper middle class/service class” including higher-grade and lower-grade professionals (with a university degree), the category of “skilled workers/middle class” representing routine non-manual and skilled manual employees, and the reference category of “semi-/unskilled workers”. *Immigrant background* was established drawing on information on the countries of birth of the students and their parents: “first generation immigrants” (born abroad), “second generation” (both parents born abroad), “2.5 generation” including students with one parent born abroad, and “non-immigrants”.

Control variables include *students' perceived achievement* and *academic school track*. Rather than using the actual grade point average that strongly depends on teachers' diagnostic skills, classroom average and grading practices, we followed the Thomas theorem—that individual actions are more strongly linked to subjectively perceived conditions than to objective conditions—and based our measure on the response relating to the questionnaire question of “Compared to other students in your classroom, how would you rate your own achievement in general?” We differentiate between students who perceive themselves as “average”, “above average” and “below average” (reference category). As outlined above, the education systems of Luxembourg and Switzerland are stratified and externally differentiated. Thus, we control for the school track that is most strongly related to a higher education pathway, and thus really needs to be taken into account when analysing educational aspirations. In Luxembourg, the academic track is the *enseignement secondaire* (ES) track that leads to a general university entrance certificate. For the Swiss sample, the school track was determined by considering subject-specific levels of instruction in three school subjects (mathematics, German language, and French language). If students were allocated in at least two out of three subjects to the (highest) academic *Spezialsekundar* level, they were considered to be upper track university-bound students.

5 | RESULTS

5.1 | Descriptive data on higher education aspirations in Years 7, 8 and 9

Figure 1 shows average marginal means for the year-specific percentage of secondary school students' educational aspirations. Three groups are differentiated: Students who mentioned a higher education degree, students who aspired to lower education degrees and students who were still undecided at the time of data gathering. All mean scores are adjusted for gender, social origin (highest class of parents) and immigrant background to allow for a better comparison between the countries. At first sight, secondary school students in Luxembourg aspire to higher education much more often than their Swiss counterparts. Towards Year 9, the proportion of students aspiring to higher education increases slightly. While in Luxembourg a general significant increase in the development of higher education aspirations can be noted (repeated measure variance analysis; LU: $F = 3.336, p < .05$), the scores for Years 7, 8 and 9 do not differ significantly from each other in the Swiss sample (CH: $F = 1.505, p = .223$). The proportion of students who aspire to *upper secondary general and vocational degrees* (rather than higher education) is much higher in the Swiss sample than in the Luxembourgish sample. In both country settings, the proportion of students who only aspire to upper secondary education has been increasing significantly over time (LU: $F = 7.284, p < .05$; CH: $F = 54.374, p < .05$). In Switzerland, this increase is more evident than in Luxembourg. In both country settings, the proportion of *undecided* students decreased significantly between Years 7 and 9 (LU: $F = 34.532, p < .05$; CH: $F = 84.870, p < .05$). This decrease was slightly more pronounced in the Swiss sample.

How do educational aspirations change? In Luxembourg (Figure 2), educational aspirations appear to be generally rather stable, particularly for students with early higher education aspirations. If changes occur, students change more often from being undecided towards secondary general and vocational aspirations, and from secondary general and vocational aspirations towards higher education aspirations. However, there is also a pronounced student proportion changing back to being undecided or changing from higher education aspirations towards secondary general and vocational education aspirations. Interestingly, 16% of the students that reported aspirations for higher education found themselves in the undecided group one year later. It is also interesting that out of the undecided group in Year 8, 23% aspired towards higher education in Year 9.

In the Swiss sample (Figure 3), there is a strong re-orientation towards vocational and general secondary schooling. Those students who aspired early to upper secondary general or vocational degrees appear to be most stable regarding their aspirations. Interestingly, a large group of students who aspired to higher education in the previous year re-orientate towards upper secondary general and vocational degrees one year later (from Year 7 to

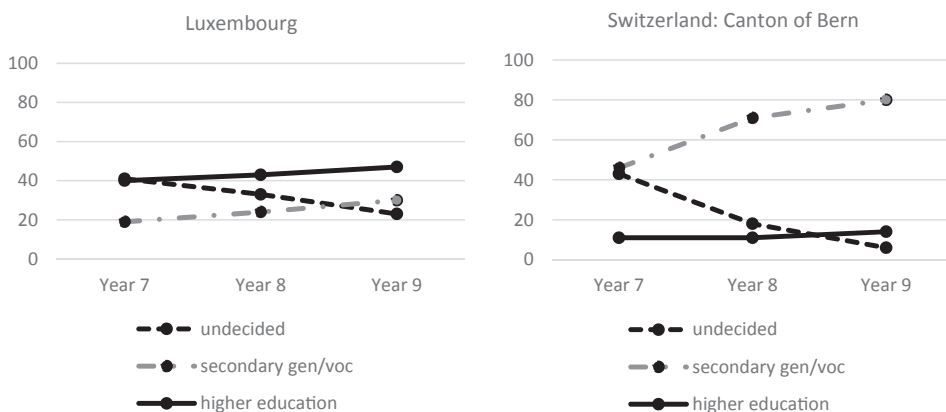


FIGURE 1 Development of higher education aspirations; Years 7, 8 and 9. Estimated marginal means. *Source:* Figure constructed by authors using data from the SASAL study on School Alienation; Swiss sample ($N = 373$) and Luxembourgish sample ($N = 370$); waves 1–3, controlled for social origin, gender, immigrant background

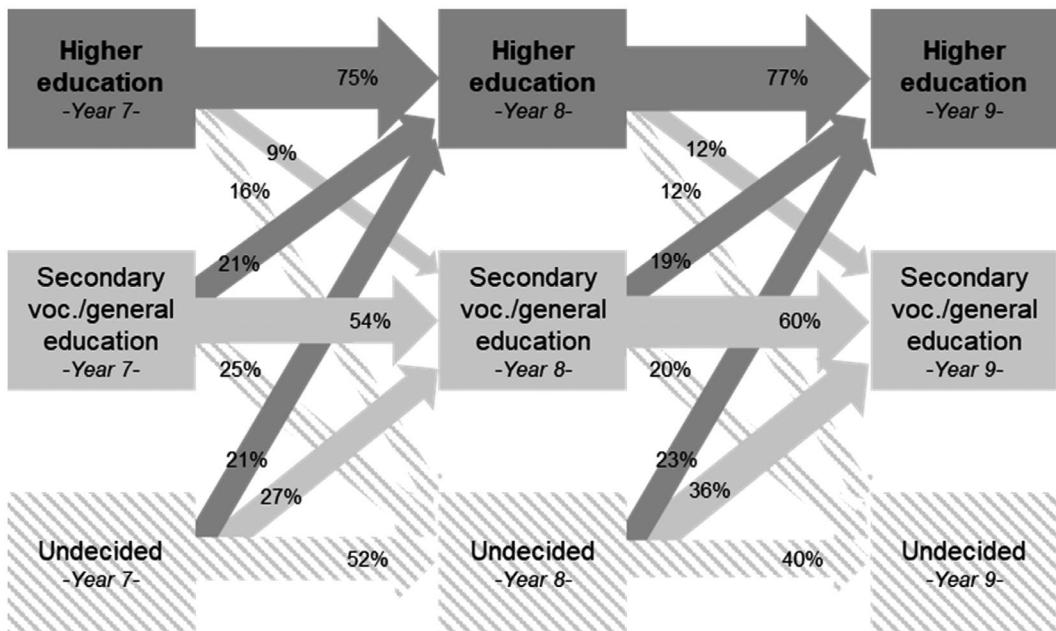


FIGURE 2 Estimated proportions of educational aspiration group membership at each time point, Luxembourg. Source: Figure constructed by authors using data from the SASAL study on School Alienation; Luxembourgish sample ($N = 366$; waves 1–3)

Year 8:52%, from Year 8 to Year 9:41%). The stability of aspirations for higher education was rather low between Year 7 and 8 but increased between Year 8 and 9. Only 12% of the students with higher education aspirations in Year 7 changed to the undecided category in Year 8. Likewise, only 10% of undecided students changed to the higher education aspiration pattern between Year 8 and Year 9.

5.2 | Multivariate analyses: Individual characteristics, values of education and educational aspirations

For an analysis of inequalities in educational aspirations and how values of education affect educational inequalities, we estimated multinomial regression models and report average marginal effects and confidence intervals to compare the Luxembourgish and Swiss results. In the first cross-sectional analysis step, we describe inequalities along the axes under consideration for Year 9 in the two country settings, as educational aspirations develop from rather diffuse aspirations towards more reasoned aspirations. Educational aspirations in Year 9 may be more settled in comparison to earlier time points; students have at this point participated in education guidance lessons, student apprenticeships in enterprises and orientation towards upper secondary education. Models resulting from the first step of our analysis (Table 1, Model 1) are simple in that they do not include school track and perceived achievement. The latter are the main mediators between individual characteristics and aspirations, and if included, reduce the effects of individual characteristics and, thus, hide educational inequalities. The second analysis step (Table 1, Model 2) addresses longitudinal impacts of values of education in Year 8 on educational aspirations one year later, while the third step (Table 2) deals with predictors of change of educational aspirations between Year 7 and Year 9. As our paper focuses on higher education aspirations, we centre on the effects for aspiring to higher education, although the tables show all effects (including those for being undecided and aspiring only to secondary education).

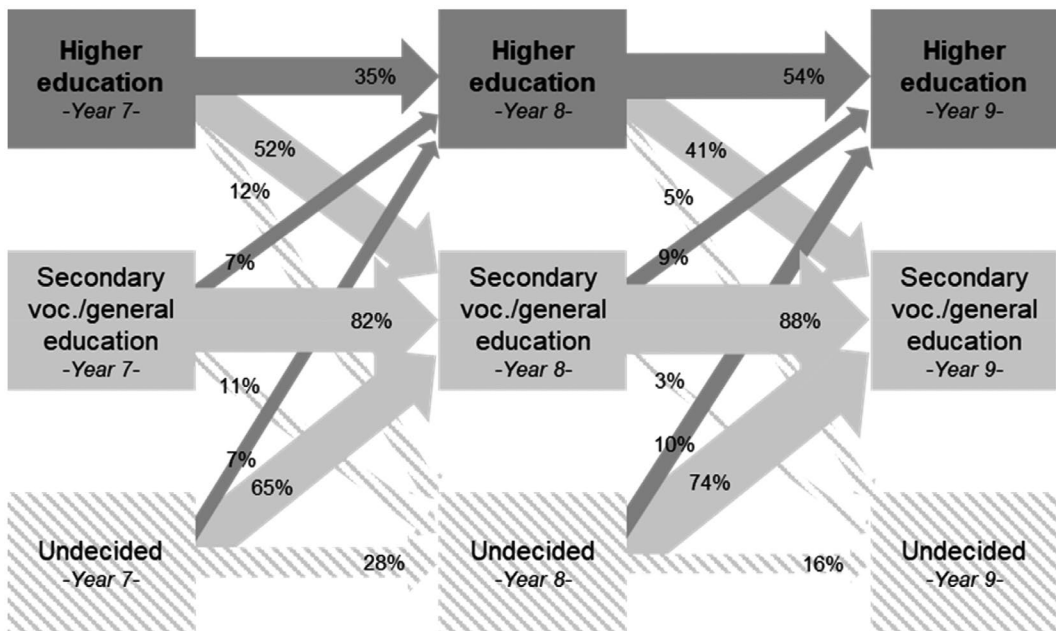


FIGURE 3 Estimated proportions of educational aspiration group membership at each time point, Canton of Bern, Switzerland. Source: Figure constructed by authors using data from the SASAL study on School Alienation, Swiss sample ($N = 375$; waves 1–3)

Considering inequalities in educational aspirations in Luxembourg in Year 9 (Table 1, Model 1), upper middle-class students most often aspire to higher education. Results also reveal significant gender differences; girls were more likely to aspire to higher education, while boys were more likely to aspire to lower educational pathways. Considering immigrant background, first-generation immigrant students tended to opt for an educational pathway below higher education ($p > .10$). In the Swiss sample, socio-economic inequalities seem to be similar to Luxembourg with students of service-class origin being more likely to aspire to higher education at all time points. No gender inequalities were found. However, the Swiss model reveals a higher prevalence of inequalities related to immigrant background. The different immigrant groups show more higher education aspirations than the natives: The 2.5 immigrant generation—students with one parent born abroad and one parent born in the country—shows a higher likelihood to aspire to higher education. First-generation immigrants seem more likely to be among the undecided.

What is the impact of values of education on educational aspirations? In Table 1 (Model 2), results of lagged analyses are presented. Values of education (Year 8) were measured one year before the educational aspirations (Year 9). The models also include individual characteristics, school track and achievement. Modelling these different factors simultaneously is a very rigid form of testing the role of values of education, as we parse out—the otherwise hidden—role of other variables. While achievement at or above the average and attending the academic secondary school track significantly increased the likelihood to aspire to higher education pathways, values of education played only a minor role in addition to the other factors. In the Luxembourgish sample, valuing stimulation in Year 8 positively predicts aspiring to higher education in Year 9 and negatively predicts being among the undecided. Valuing comfort or status also negatively predicts being among the undecided. In the Swiss sample, analysing these lagged associations reveals the following significant effect of values of education. Namely, that students scoring high on the comfort or status dimension are even more likely to be among the undecided in Year 9. Thus, the Luxembourgish and Swiss results reveal opposite effects in regard to comfort or status.

TABLE 1 Individual characteristics, values of education (Year 8) and higher education aspirations (Year 9) in Luxembourg and Switzerland

Multinomial logit models		Luxembourg			Switzerland: Canton of Bern			Luxembourg			Switzerland: Canton of Bern		
Average Marginal Effects (95% confidence intervals)		Educational aspiration, Year 9			Educational aspiration, Year 9			Educational aspiration, Year 9			Educational aspiration, Year 9		
		Model 1			Model 1			Model 2			Model 2		
Aspiration		Undecided	Secondary general/secondary vocational	Higher education	Undecided	Secondary general/secondary vocational	Higher education	Undecided	Secondary general/secondary vocational	Higher education	Undecided	Secondary general/secondary vocational	Higher education
Gender (Ref. girls)													
Boys		-.01 (-.10/.08)	.14* (.04/.23)	-.13* (-.22/- .03)	.00 (-.05/.05)	-.01 (-.09/.07)	.01 (-.06/.08)	-.04 (-.13/.04)	.09† (-.01/.18)	-.04 (-.14/.05)	-.00 (-.05/.05)	-.04 (-.13/.04)	.05 (-.03/.12)
Social origin (Ref. semi-/unskilled workers)													
Skilled workers/Middle class		-10† (-.22/.02)	-.01 (-.15/.12)	.11 (-.04/.27)	.02 (-.06/.10)	-.06 (-.22/.08)	.05 (-.09/.20)	† (-.22/.01)	-.00 (-.13/.12)	.11 (-.03/.25)	.03 (-.05/.11)	-.07 (-.21/.08)	.04 (-.10/.17)
Upper middle/service class		-.11 (-.25/.03)	-.21* (-.37/- .05)	.32* (.15/.48)	.02 (-.07/.11)	-.20* (-.36/- .03)	.18* (.03/.33)	-.09 (-.23/.06)	-.07 (-.23/.09)	.15† (-.01/.32)	-.03 (-.06/.12)	-.15† (-.32/.01)	.13† (-.01/.27)
Immigrant background (Ref. non-immigrants)													
2.5 generation immigrants		-.01 (-.15/.12)	.08 (-.07/.22)	.06 (-.21/.08)	.02 (-.06/.10)	-11† (-.21/.00)	.09* (.00/.17)	-.06 (-.18/.07)	-.10 (-.04/.24)	-.04 (.18/.09)	.02 (-.05/.10)	-.10† (-.21/.00)	.08† (-.00/.16)
2 generation immigrants		.06 (-.06/.17)	-.02 (-.11/.14)	-.07 (-.20/.06)	.03 (-.04/.10)	-.02 (-.14/.10)	.01 (-.11/.10)	.03 (-.08/.14)	-.01 (-.13/.11)	-.02 (-.13/.10)	.02 (-.05/.09)	-.02 (-.13/- .10)	-.01 (-.11/.10)
1 generation immigrants		-.02 (-.16/.12)	.13† (-.01/.27)	-.11 (-.26/.05)	.11* (.04/.17)	-13† (-.27/.01)	.02 (-.11/.15)	-.06 (-.20/.07)	.07 (-.07/.21)	-.00 (-.15/.14)	.19* (.02/.16)	-.13† (-.27/.01)	.04 (-.09/.16)
Values of Education (Year 8)													
Stimulation						-.08* (-.15/- .01)	.11* (.03/.19)	-.03 (-.11/.05)	-.03 (-.11/.05)	.11* (.03/.19)	.02 (-.03/.07)	-.05 (-.14/.03)	.04 (-.03/.11)
Comfort/Status						-.09* (-.17/- .01)	.04 (-.07/.14)	.05 (-.06/.15)	.05 (-.06/.15)	.04 (-.07/.14)	.07* (.01/.14)	-.06 (-.15/.03)	-.02 (-.09/.06)

(Continues)

TABLE 1 (Continued)

Multinomial logit models	Luxembourg		Switzerland: Canton of Bern		Luxembourg		Switzerland: Canton of Bern	
	Educational aspiration, Year 9		Educational aspiration, Year 9		Educational aspiration, Year 9		Educational aspiration, Year 9	
	Model 1		Model 1		Model 2		Model 2	
Average Marginal Effects (95% confidence intervals)								
Aspiration		Secondary general/secondary vocational		Secondary general/secondary vocational		Secondary general/secondary vocational		Secondary general/secondary vocational
	Undecided	Higher education	Undecided	Higher education	Undecided	Higher education	Undecided	Higher education
Behavioural confirmation								
					.00	-.02	-.00	-.03
					(-.05/.06)	(-.04/.08)	(-.03/.03)	(-.08/.02)
Affection					-.01	.02	-.01	.00
					(-.08/.06)	(-.06/.10)	(-.05/.02)	(-.06/.06)
School track (Year 9)								
(Ref. low and medium vocational, MOD/EST)								
Academic track (ES)					-.05	-.33*	-.03	-.11†
					(-.14/.05)	(-.44/.22)	(-.11/.06)	(-.22/.01)
Self-perceived achievement (Ref. below average) (Year 9)								
Average					-.30*	.06	-.11	-.00
					(-.51/-.08)	(-.14/.25)	(-.26/-.04)	(-.16/.15)
Above average					-.40*	.07	-.15*	-.06
					(-.62/-.18)	(-.14/.28)	(-.30/.00)	(-.23/.10)
Constant	.19	Base outcome	-.341*	-2.91	4.80*	Base outcome	-7.61*	Base outcome
N	355		377		355		377	
Pseudo R square	.06		.06		.19		.15	

Note: significance levels: †.10; *.05; **.01; ***.001.
We put all significant coefficients in bold to highlight them.
Source: Table constructed by authors using data from the SASAL study on School Alienation in Switzerland and Luxembourg.

TABLE 2 Individual characteristics, values of education (Year 8) and the change in higher education aspirations between Year 7 and Year 9 in Luxembourg and Switzerland

Multinomial logit models	Luxembourg			Switzerland: Canton of Bern		
Average Marginal Effects (95% confidence intervals)	Educational aspiration, Year 9			Educational aspiration, Year 9		
Aspiration	Undecided	Secondary general/secondary vocational	Higher education	Undecided	Secondary general/secondary vocational	Higher education
Gender (Ref. girls)						
Boys	-.02 (-.11/.06)	.07 (-.02/.16)	-.05 (-.14/.04)	-.00 (-.06/.05)	-.03 (-.11/.06)	.03 (-.04/.10)
Social origin (Ref. semi-/unskilled workers)						
Skilled workers/Middle class	-.11 [†] (-.22/.01)	.02 (-.11/.14)	.09 (-.05/.22)	.05 (-.04/.14)	-.05 (-.20/.10)	.00 (-.13/.13)
Upper middle/service class	-.08 (-.22/.07)	.07 (-.07/.15)	.08 (-.08/.25)	.05 (-.05/.15)	-.12 (-.28/.04)	.07 (-.07/.20)
Immigrant background (Ref. non-immigrants)						
2.5 generation immigrants	-.04 (-.17/.09)	-.07 (-.07/.21)	-.03 (-.16/.09)	.02 (-.06/.09)	-.08 (-.18/.03)	.06 (-.02/.14)
2 generation immigrants	.01 (-.09/.12)	-.02 (-.14/.10)	.01 (-.10/.12)	.02 (-.05/.09)	.01 (-.11/-.13)	-.04 (-.14/.07)
1 generation immigrants	-.05 (-.18/.08)	.08 (-.06/.21)	-.02 (-.16/.11)	.07 [†] (-.00/.14)	-.11 (-.25/.03)	.04 (-.08/.16)
Values of Education (Year 8)						
Stimulation	-.09* (-.16/-.03)	-.00 (-.08/.08)	.10* (.02/.18)	.01 (-.05/.06)	-.06 (-.15/.02)	.06 (-.02/.13)

(Continues)

TABLE 2 (Continued)

Multinomial logit models	Luxembourg			Switzerland: Canton of Bern		
Average Marginal Effects (95% confidence intervals)	Educational aspiration, Year 9			Educational aspiration, Year 9		
Aspiration	Undecided	Secondary general/secondary vocational	Higher education	Undecided	Secondary general/secondary vocational	Higher education
Comfort/Status	-.07 [†] (-.15/.01)	.04 (-.06/.13)	.03 (-.06/.13)	.08* (.01/.16)	-.06 (-.16/.03)	-.02 (-.10/.05)
Behavioural confirmation	.02 (-.04/.08)	.03 (-.03/.09)	-.05 (-.10/.01)	-.01 (-.04/.02)	-.03 (-.09/.02)	.04 [†] (-.00/.09)
Affection	-.00 (-.07/.07)	.01 (-.06/.08)	-.01 (-.08/.06)	-.00 (-.04/.03)	-.00 (-.06/.06)	.00 (-.05/.05)
School track (Year 9) (Ref. low and medium vocational, MOD/EST)						
Academic track (ES)	-.03 (-.12/.07)	-.26* (-.37/-.15)	.29* (.21/.37)	-.02 (-.11/.06)	-.09 (-.20/.02)	.11* (.03/.19)
Self-perceived achievement (Ref. below average) (Year 9)						
Average	-.20* (-.40/-.00)	.09 (-.10/.28)	.11 (-.08/.30)	-.09 (-.24/-.07)	-.03 (-.18/.13)	.11* (.08/.15)
Above average	-.30* (-.50/-.10)	.10 (-.09/.30)	.20* (.01/.40)	-.12 (-.28/.03)	-.08 (-.25/.08)	.21* (.14/.28)
Educational aspiration (Year 7) (Ref. Secondary general/vocational)						
Undecided	.16* (.06/.26)	.06 (-.04/.16)	.24* (.09/.39)	-.05 [†] (-.15/.05)	-.00 (-.10/.10)	-.04 (-.14/.06)

(Continues)

TABLE 2 (Continued)

Multinomial logit models	Luxembourg			Switzerland: Canton of Bern		
	Educational aspiration, Year 9			Educational aspiration, Year 9		
	Undecided	Secondary general/secondary vocational	Higher education	Undecided	Secondary general/secondary vocational	Higher education
Average Marginal Effects (95% confidence intervals)						
Aspiration						
Higher education	(.05/.27) -.11 [†]	(-.14/.25) .07	(.08/.41) .33*	(-.01/.10) .02	(-.09/.08) -.18*	(-.11/.02) .17*
Constant	(-.23/.02) -4.16*	(-.14/.28) Base outcome	(.15/.50) -1.86	(-.07/.10) -9.03*	(-.34/-.03) Base outcome	(.03/.31) -19.72
N	346			358		
Pseudo R square	.26			.18		

Note: Significance levels:

†.10; *.05; **.01; ***.001

Source: Table constructed by authors using data from the SASAL study on School Alienation in Switzerland and Luxembourg.

Table 2 illustrates change in aspirations between Year 7 and 9. The educational aspiration in Year 7 is modelled as an independent predictor of the educational aspiration in Year 9. The perceived achievement and school track in Year 9 are the major drivers of the change towards higher education aspirations. Perceiving stimulation as a main benefit of education in Year 8 also increased the likelihood of a change towards higher education aspirations in Year 9 in Luxembourg. The same was true for behavioural confirmation in the Swiss sample (at the 10% significance level), i.e., students who reported that they value education because their family, peers or society values education tended to change towards higher education aspirations one year later. Interestingly, neither gender nor immigration effects could be found in either country.

6 | DISCUSSION

The aim of the study on which this article reports was to investigate secondary school students' aspirations to higher education and the role of educational values (stimulation, comfort, status, behavioural confirmation and affection) as drivers of educational aspirations in two country settings, Luxembourg and Switzerland (Canton of Bern). With regard to the extent of aspirations in Years 7, 8 and 9 (research issue 1), the results reveal that while higher education aspirations generally only slightly increased between Years 7 and 9, students in Luxembourg more strongly aspired to higher education than in Switzerland. Swiss students developed a greater interest in secondary vocational education. This might be related to vocational guidance lessons, the comparably high prestige of vocational education and training pathways. Another reason may be that a later transition to post-secondary and tertiary vocational pathways is still more likely after attending certain secondary vocational programmes in Switzerland (Swiss Coordination Centre for Research in Education, 2018) than in Luxembourg.

Regarding disparities in higher education aspirations among students (research issue 2), in the less complex models (modelling axes of inequality only) boys appeared to be less likely to aspire to higher education when compared to girls. High SES students aspired comparatively more often to higher education. However, these disparities largely disappeared after including school track and achievement as (more proximal) factors of educational aspirations. Regarding the role of different values of education on aspirations towards higher education (research issue 3), in the Luxembourg sample, stimulation seems to link positively to higher education aspirations, while in Switzerland the complex models only revealed a marginal impact of behavioural confirmation on the change of higher education aspirations.

While certain values of education appear to affect higher education aspirations, their role appears to be limited, as the statistical effects are less strong compared to other factors. This may be rooted in the fact that aspirations have already been adapted and likely "cooled down" in lower secondary education, as opportunities in the education system and students' achievement capacities become clearer to students (e.g., Walkey et al., 2013). Among the minor impacts of values of education on educational aspirations is the effect of stimulation—an intrinsic benefit of education that is not covered in rational approaches (Becker, 2003; Boudon, 1974)—which appears to be of importance for higher education aspirations. Thus, in this way, broadening the definition of benefits of education and applying social production function theory (Lindenberg, 1996; Ormel et al., 1999) and Bourdieu's habitus concept (Bourdieu, 1984) appears to be fruitful.

A comparison of the two education systems (research issue 4) revealed fewer inequalities in the Swiss setting than in the Luxembourgish setting; however, tracking was a major mechanism behind inequalities in both settings which emphasises the impact of structural aspects on inequality (Van de Werfhorst & Mijs, 2010). While the Swiss education system is often referred to as being inequality-prone (e.g., Buchmann et al., 2016), the Luxembourgish case is not dissimilar and may be even more prone to disadvantage certain student groups, as parallel secondary school tracks in the more centralised Luxembourgish system are less permeable and school settings are more segregated.

While disparities in the values of education were not in the scope of our present analyses, drawing on habitus theory by Bourdieu (1984), values of education may vary between different student groups. Previous research, based on the same samples and relating to secondary school students in Year 8, revealed pronounced gender effects in the Luxembourgish and the Swiss samples. Among students, boys valued the stimulation aspect of education less when compared to girls; boys appreciated behavioural confirmation comparatively more than girls did. Significant disparities structured by social origin were noted only for the Swiss sample, in which students from the middle class—in comparison to upper-middle-class students—assigned a lower value to stimulation, to comfort or status and to affection. Second-generation immigrants in Luxembourg valued stimulation and comfort or status less than Luxembourgish non-immigrant students, and first-generation immigrants assigned a lower value to stimulation and affection. In the Swiss sample, first- and second-generation immigrants assigned a higher value to education regarding behavioural confirmation and first-generation immigrants saw a greater benefit of education in relation to comfort and social status (Scharf et al., 2019).

Interpreting the results, certain limitations should be taken into account. Although we controlled for causes of bias by including the axes of inequalities, it must be mentioned that the samples are not representative. Future research may also benefit from an investigation of intersectionalities, such as the specific disadvantages of low SES men among immigrants that may form the multi-layered drivers behind inequality findings. Certain measurements also raise issues. An operationalisation of social origin via student reports on parental professions is not optimal, but validation checks indicate that student information had been quite consistent. The values of education scale do not only mirror general perceptions as to why going to school is meaningful but also specific experiences at school. Exploratory factor analyses revealed that the values of education item batteries have been perceived by the students in terms of more general values, while other item batteries (e.g., school alienation, Morinaj et al., 2017) turned out to be more situation specific. The perceived student achievement in comparison to others may be more important than other achievement measures for a student's educational aspirations, but it does not replace skill and competence measures. Moreover, students' ratings could have been affected by the assessment time during the school year.

Drawing implications from these findings, schools and education systems might invest more in the encouragement of certain student groups to aspire to higher education by stressing the benefit of education and also by providing all students with positive schooling and learning experiences. The perceptions of students during secondary school are crucial for their further educational decisions. Instructional innovations may include lessons that deal with the values of education—addressing for example the meaning of schooling and learning in the life course of individuals, and the benefits of schooling for different areas of life. They may also include lessons that centre on career counselling and go beyond the description of different professions by outlining the education system in its complexity and emphasising what students may need to achieve their career preferences. Additionally, a more individualised student mentoring experience over the course of education trajectories could help to prevent inequalities. Furthermore, a need to compensate for the lack of resources among certain groups could be discussed. This may apply more to education systems where higher education is of high importance, as in Luxembourg, and to a lower extent, to systems that provide powerful alternatives to higher education (e.g., upper secondary vocational pathways), as in Switzerland.

DATA AVAILABILITY STATEMENT

Data available on request due to privacy/ethical restrictions.

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