

## Article

# Access to Baccalaureate School in Switzerland: Regional Variance of Institutional Conditions and Its Consequences for Educational Inequalities

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**Abstract:** In Switzerland, baccalaureate school is still considered to be the royal road to a university education and the elite path for the social reproduction of the upper class. However, cantonal enrollment to baccalaureate school varies widely due to Swiss federalism. There is a recurring debate on whether access to baccalaureate school is fair and equal among pupils who live in different cantons and who are of different social origin. This paper aims to analyze how the institutional conditions of cantons and municipalities impact a pupil's probability of entering baccalaureate school and how the cantonal provisioning of places in baccalaureate school affects social inequality of access. For our theoretical foundation, we combine concepts of neo-institutionalism with mechanisms of social reproduction in education. Empirically, we analyze national longitudinal register data to model educational transitions from compulsory to baccalaureate school by using logistic regression models. Our results show that institutional structures at the cantonal and municipal levels influence the probability of transition beyond individual pupils' characteristics. The degree of inequality varies between cantons, depending on the supply of baccalaureate school places. Inequality first increases with an increasing number of places (the scissors effect) and decreases only after the demand of more privileged families for places at baccalaureate school is saturated.

**Keywords:** baccalaureate school; Switzerland; educational federalism; educational transition; upper-secondary education; regional variance; educational structures; educational provision; educational inequalities



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## 1. Introduction

Baccalaureate school (*Gymnasium*) (Information on the denomination and descriptions of the different educational pathways can be found at <https://www.edk.ch/en/education-system/basics>, accessed 10 March 2022) at the upper-secondary level is the royal road to universities in Switzerland, although new pathways have been institutionalized in recent decades [1,2]. Consequently, in the public, in politics, and in the educational sciences, discussions repeatedly arise as to whether access to baccalaureate school is fair and equal. On the one hand, previous research has well documented, and frequently denounced, inequalities related to individual characteristics, particularly to social origin [3–5]. Social origin influences the transition to baccalaureate school and leads to educational inequalities, even when we control for the academic performance of pupils. On the other hand, scholars have problematized the great variation in the proportion of pupils in baccalaureate school between and within cantons, which cannot solely be explained by differences in pupil performance [6–10].

Studies that deal with the impact of regional factors on educational transitions have concluded that institutional factors of the cantonal educational system—in particular, the

extent of separation at the lower-secondary level [3,11,12] or the infrastructure, namely the provision of places in educational institutions [13–15]—can play a decisive role in the opportunity of access to certain educational tracks. Moreover, the socio-spatial factors of a community, such as the level of urbanization, the economic structure, and the social structure of the population [3,7,8,16–19], can also play a role.

So far, however, research has paid little attention to the dimensions of educational and socio-spatial structures of cantons and communities that moderate a pupil's chances of being enrolled in baccalaureate school. An exception is the study by Buchmann, Kriesi, Koomen, Imdorf, and Basler [13], which investigated the role of the cantonal proportion of baccalaureate degrees as well as of entry exams in regulating admission. At the same time, the degree of social inequality in access between cantons as it relates to the cantonal educational provisioning of places at baccalaureate school—one of the main structural conditions that varies between the cantons—has been neglected in recent research. An important exception for Switzerland is the study by Combet [7]. She analyzed the impact of three different features of cantonal education systems from the perspective of social inequality, although she remained focused on the transition from primary school to the highest track in lower-secondary level—the pre- or long-term baccalaureate school—and did not take into account the cantonal educational provisioning of places at baccalaureate school. Another exception is the study by Sixt [20], which, however, concentrates exclusively on Germany.

This paper therefore aims to answer the two following questions: (1) How do educational and socio-spatial structures of cantons and municipalities impact pupils' access to baccalaureate school? (2) How does inequality vary between pupils from different social origins due to variations in the cantonal educational provisioning of places at baccalaureate school? For our theoretical foundation, we combined concepts of neo-institutionalism with the mechanism of social reproduction in education. Empirically, we analyzed national longitudinal register data to model educational transitions from compulsory school to baccalaureate school at the upper-secondary level by applying logistic regression models.

This article is structured as follows. Section 2 briefly describes the main structures of the Swiss education system. Section 3 outlines the state of research on individual and regional factors of access to baccalaureate school. Section 4 depicts the data and methods used in our empirical analysis. The results on regional variance and its impact on being enrolled in baccalaureate school as well as the consequences of social inequalities in gaining access are presented in Section 5. Section 6 summarizes these findings and presents our corresponding conclusions.

## **2. Transition from Compulsory Schooling to Baccalaureate School: Varying Institutional Conditions in the Swiss Federal Education System**

At the transition from lower- to upper-secondary education, 95% of the pupils in Switzerland enter one of the three federally certified pathways within two years after completing their compulsory education. One-fifth enroll in baccalaureate school, 5% choose upper-secondary specialized school, and two-thirds start a vocational education and training program, which is mostly organized in the form of apprenticeships [16]. Baccalaureate school is the most demanding of these paths in terms of academic performance. Young people who complete this track with a baccalaureate are formally entitled to enroll in all types of higher-education institutions: traditional cantonal and federal universities, universities of applied sciences, and universities of teacher education. However, if they wish to study at a university of applied sciences, they need one year of practical experience in the form of an internship. In contrast, the two other pathways for upper-secondary education have staggered degrees, which means that additional educational achievements and exams are required after the first diploma in order to enroll in universities.

Baccalaureate school is still set up as an elitist route for the social reproduction of the upper class, a sort of royal road to universities, although new pathways to university education have been introduced in the last three decades [1,2]. At the transition to higher education, 95% of pupils who graduated with a baccalaureate diploma from baccalaureate

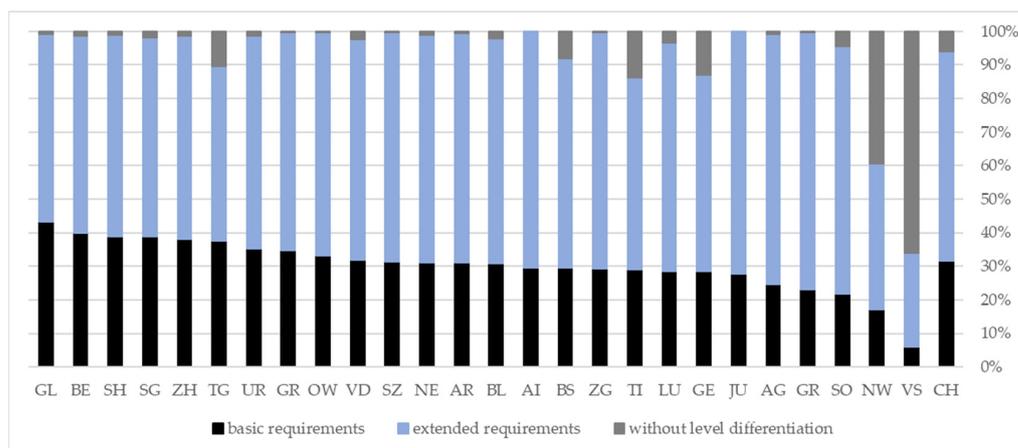
school enter a university, with 77% going to a traditional university, which alone has the right to award doctorates. In comparison, when attending upper-secondary specialized school or vocational education and training, the transition rate to university education is much lower [21], and graduates with a baccalaureate from the specialized school or the vocational education and training program have formal access only to universities of applied sciences.

The Swiss education system of compulsory schooling and general education at the upper-secondary level is characterized by educational federalism that is firmly anchored both in regulations and at the cultural level [22,23]. Such federalism is rooted in the cantonalization of educational structures from the 19th century onward [24]. This federal system provides for the far-reaching autonomy of the 26 Swiss cantons in educational policy. As a consequence, the cantons provide different educational structures and apply different regulations in the governance of educational transitions in terms of educational provision and admission regulations [8,25–27]. Considerable differences, however, also exist at the municipal level. Cantons in German-speaking Switzerland in particular delegate many legislative and administrative tasks to local governments, whereas the French- and Italian-speaking regions rather exercise their educational authority through strong, centralized state bureaucracies [22].

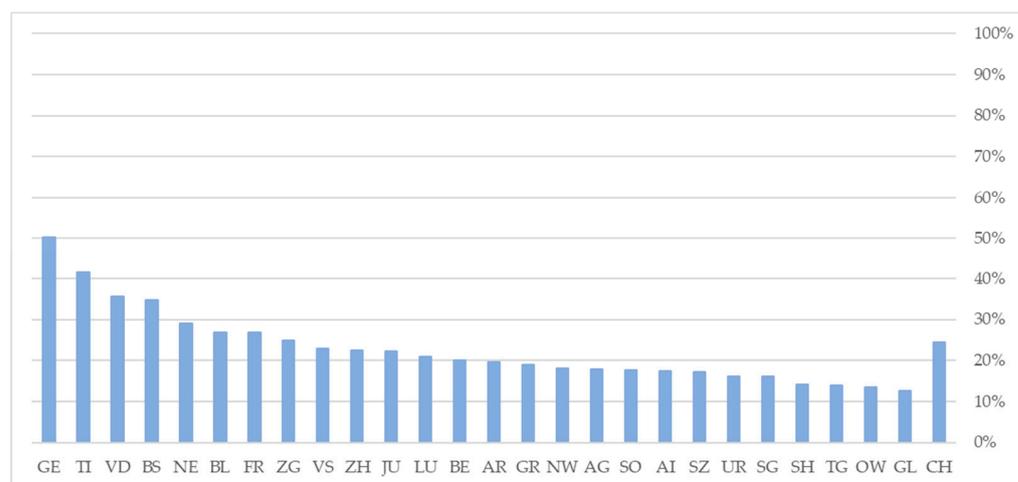
Common to all cantons, however, are the two transitions from the primary to lower-secondary level and from the lower-secondary to upper-secondary level, which involve selection processes and lead to subsequent performance tracking and unequal opportunities of education at the tertiary level [11,13]. The differentiated system in Switzerland leads to an accentuation of social inequalities in the educational pathways [13]. At a very early stage in their lives, pupils are assigned after primary school to different tracks at the lower-secondary level that group pupils according to their educational performance. Research has shown that the educational pathways at the transition from lower- to upper-secondary school are shaped to a large extent by sorting pupils along social classes into the tracked system at the end of primary school [10,11,13,28,29]. Depending on the canton, the number of tracks varies between two and four, and each track can be classified as a level with basic or advanced requirements. Apart from these segregated models where children are assigned according to a fixed requirement level for all subjects, private schools in particular, as well as certain cantons and communities, have more permeable and inclusive models [30]. In these models, no separation along these lines exists; children continue to be taught together in the same class. Only in selected subjects is ability grouping implemented, whereby children attend classes according to their performance level in the given subject.

As Figure 1 shows, the proportion of the two levels is different among the cantons, which implies unequal opportunities among the cantons [7]. Only a few cantons offer a comprehensive system without level differentiation (an integrated model). Furthermore, in some cantons, children can already enter baccalaureate school at the end of primary schooling (long-term baccalaureate) or after the first or second year of lower-secondary education. (In Figure 1, this “pre-baccalaureate track” is integrated into the advanced-requirement track). The municipalities of certain cantons have a great deal of leeway in implementing cantonal guidelines. The extent to which pupils are separated into different tracks, the number and permeability of tracks, and the distribution of pupils between the two requirement levels can therefore greatly differ within cantons [8,11].

Furthermore, the proportion of pupils who enter baccalaureate school varies greatly by canton. As Figure 2 demonstrates, this proportion is between 13% and more than 50%. A closer look at the cantons shows that the cantons in French- and Italian-speaking Switzerland (GE, TI, VD, NE, FR, VS, and JU) as well as the city cantons (GE and BS) have a higher proportion of pupils entering baccalaureate school than most of the German-speaking cantons.



**Figure 1.** Distribution of lower-secondary graduates of 2013 by track and canton (%). Data source: FSO, Longitudinal Analyses in Education (LABB); our own calculations based on the cohort analyzed in this paper. AG = Argovia; AR = Appenzell Outer-Rhodes; AI = Appenzell Inner-Rhodes; BS = Basle-City; BL = Basle-Country; BE = Berne; FR = Friburg; GE = Geneva; GL = Glarus; GR = Grisons; JU = Jura; LU = Lucerne; NE = Neuchâtel; NW = Nidwald; OW = Obwald; SZ = Schwyz; SH = Schaffhouse; SO = Soleure; SG = St. Gall; TI = Ticino; TG = Thurgovia; UR = Uri; VD = Vaud; VS = Valais; ZG = Zug; ZH = Zurich.



**Figure 2.** Proportion of lower-secondary graduates of 2013 entering baccalaureate school by canton (%). Data source: FSO, Longitudinal Analyses in Education (LABB); our own calculations based on the cohort analyzed in this paper. AG = Argovia; AR = Appenzell Outer-Rhodes; AI = Appenzell Inner-Rhodes; BS = Basle-City; BL = Basle-Country; BE = Berne; FR = Friburg; GE = Geneva; GL = Glarus; GR = Grisons; JU = Jura; LU = Lucerne; NE = Neuchâtel; NW = Nidwald; OW = Obwald; SZ = Schwyz; SH = Schaffhouse; SO = Soleure; SG = St. Gall; TI = Ticino; TG = Thurgovia; UR = Uri; VD = Vaud; VS = Valais; ZG = Zug; ZH = Zurich.

### 3. State of Research and Theoretical Considerations

Educational transitions are the result of the interplay between institutional conditions like educational provision or extent of separation and ability grouping, as well as individual resources and factors that structure the educational opportunities, aspirations, and choices of young people and their families [17,26].

#### 3.1. Theoretical Framing of Institutional Conditions

A helpful concept for capturing regionally different institutional conditions in a sociological perspective is the three pillars of institutions proposed by Scott [31]. He distinguishes between a regulative pillar, which comprises laws and regulations, a normative

pillar, which refers to norms and standards, and a cultural–cognitive pillar, which includes shared beliefs and matters of fact. As for the regulative pillar, materializations of educational policies are the extent of separation and ability grouping, the number of tracks at the lower-secondary level, the number of schools and places at baccalaureate school in different cantons, or the admission regulations. The number of pupils who start their post-compulsory education at baccalaureate school roughly reflects the number of places provided at baccalaureate school, as they are subject to a certain historical and regional immobility. Establishing new places in baccalaureate schools takes time and money. Furthermore, certain cantons pursue the informal or explicit restriction of provision and formulate maximum quotas for baccalaureate school [8].

As for the normative and cultural–cognitive pillar, in French or Italian cantons, the proportion of pupils in baccalaureate school is much higher than in German-speaking Switzerland (Figure 2) [16,19,30], and pupils and parents exhibit stronger preferences for baccalaureate school [32,33]. An explanation for this variance points to cultural differences among linguistic regions. They are a result of different normative ideas and shared beliefs about the value of general and vocational education [34,35], the social function of education [36–38], and the norms valuing private or state provision of (educational) goods [39]. A result of this is that, in French- and Italian-speaking Switzerland, education has rather the function of a social elevator and integrator, and the state is responsible for providing and financing educational opportunities for all pupils. By contrast, in German-speaking cantons, education is rather based on the idea of competition and serves for selection and allocation in the labor market. In these cantons, great importance is attached to post-compulsory education being financed by the economy, for which reason apprenticeship training is strongly promoted and supported.

### 3.2. *The Role of Cantonal and Municipal Factors in Access to Baccalaureate School*

As previous research points out, institutional conditions of regions, cantons, and municipalities in the federally organized education system are probably decisive factors in a pupil's chances of transitioning to baccalaureate school. As the statistics in Figure 2 demonstrate, the proportion of baccalaureate school entrants varies greatly among cantons, and even though the overall rate of pupils in baccalaureate school has slowly risen in recent decades, the relative cantonal differences have remained quite stable [40]. Since we cannot suppose that the pupils' academic performances are so unevenly distributed between cantons, we must conclude that the chances of entering baccalaureate school are unequally distributed between the cantons, depending on how many places at baccalaureate school are provisioned [13]. Moreover, we can assume that today, the available supply of places is generally smaller than the numbers of families with aspirations of their children attending a baccalaureate school. Therefore, the larger the number of places, the more likely it is that pupils can move on to baccalaureate school [18]. Thus far, however, there have been no empirical studies on this aspect. On the basis of these considerations, we offer the following hypotheses:

**Hypothesis H1.** *The higher the number of places provisioned at baccalaureate school in a given canton, the greater the individual probabilities of entry into baccalaureate school.*

As we noted in Section 2, municipalities have a great deal of leeway in implementing school structures. Thus, the proportion of pupils in tracks with basic requirements for lower-secondary education varies substantially across and within the cantons. The track with basic requirements traditionally leads to a vocational and educational training (VET) program. We can assume that, in municipalities where the proportion of pupils in tracks with basic requirements is rather high, VET is still a respected and valid option for many parents and pupils, even when the latter are enrolled in the track with advanced requirements. Consequently, in these communities, parents' aspirations for their children to attend baccalaureate school and the pressure on teachers to enable it are lower than in

municipalities where parents do their utmost to ensure that their child attends the level with advanced requirements to gain access to baccalaureate school. For this reason, any study on access to baccalaureate school must consider the impact of distributions of pupils between requirement levels at the lower-secondary level within municipalities:

**Hypothesis H2.** *The larger the proportion of pupils enrolled in tracks with basic requirements in a municipality, the greater the value placed on the vocational path, and the smaller the probability that a pupil will enter baccalaureate school.*

Furthermore, the educational transition to baccalaureate school is predetermined to a lesser extent when pupils attend integrated school models within lower-secondary education (i.e., schools that have no fixed differentiation in levels instead of schools with segregated models) [3,11,12,41]. This model allows for better development of student achievement and does not entail institutional barriers to baccalaureate school. Therefore, we assume that a higher proportion of pupils in integrated models will correlate with more pupils enrolled in baccalaureate school:

**Hypothesis H3.** *The larger the proportion of pupils within models without fixed level differentiation in a municipality, the higher their probability of entering baccalaureate school.*

Another aspect of regional differences concerns the question of whether the municipality of residence is more urban or rural in character. Research states that those individuals who live in an urban region rather than in a rural community have a higher probability of starting baccalaureate school [3,8,16,18,19], which in turn has a negative impact on companies' willingness to offer apprenticeship places [42]. Urban communities are characterized by an economic structure with a comparatively low proportion of workplaces in the secondary sector and with a comparatively high proportion of workplaces in the tertiary sector [17]. Firms and institutions in the high-qualification, knowledge-intensive service sector, such as financial services, information technology and telecommunications, education, health, or research and development, are less rooted in the dual VET system [43,44]. They train fewer apprentices [44,45], and their overall willingness to do so has decreased [46]. We also can assume that the more pronounced demand for highly skilled labor in cities could lead to the political will to offer more places at baccalaureate school [30]. As a result, the provision of apprenticeship places is lower than in rural areas. This in turn could promote aspirations for baccalaureate school among the population [17]. For the city cantons, we can assume that the more pronounced demand for highly skilled labor could lead to the political will to offer more places at baccalaureate school [30]:

**Hypothesis H4.** *For pupils who live in urban regions, the probability of entering baccalaureate school is higher than for pupils who live in rural areas.*

### 3.3. Varying Inequality: The Interplay between Social Origin, Social Composition of the Population in a Municipality, and the Provision of Baccalaureate School Places in Access to Baccalaureate School

Empirical results indicate that the transition to baccalaureate school is strongly shaped by the pupils' social origin, even when controlling for the academic performance of the pupils [3–5,13,16,28,47,48]. This can be explained by social disparities in educational aspirations, familiarity with the academic path, investments to better prepare for educational selection processes, and decisions made by the school authorities. The theory of social and cultural reproduction put forward by Bourdieu et al. [49,50] claims that in modern societies, the school has become the most important institution for the reproduction of social classes. Therefore, as part of the inter-generational reproduction of the social status of the family, socially privileged and well-educated parents pursue strategies to enable their children to attend baccalaureate school [51]. The habitus of these families—as a system of enduring dispositions inculcated by economic, cultural, and social capital—comprises attitudes,

ambitions, motivations, and modes of action that support the successful transition to baccalaureate school. The parents have typically attended baccalaureate school themselves and are familiar with the academic pathway. Better-educated parents assert their aspirations by exerting more influence in discussions with teachers about the adequacy of grades and the decision on the future educational pathway of their children [52]. Likewise, teachers are more inclined to recommend a low-performing pupil for baccalaureate school if the child comes from a socially privileged family [53].

Theoretical explanations of socially diverse educational choices can also be explained along the more individualistic lines of rational choice, as proposed by Boudon [54] and Breen and Goldthorpe [55]. From this perspective, members of social classes assess the costs, benefits, and risks of an educational pathway differently [56]. For economically well-established parents, the financial investments (e.g., for private preparatory courses for exams, the longer educational path compared to a vocational apprenticeship) are lower than for economically less well-off parents. Likewise, the risks of failure (e.g., not completing the baccalaureate school) are smaller. However, the benefit is greater than for families from lower social classes. For the reproduction of their social status, the educational path via the baccalaureate school is a prerequisite for the well-to-do but not for the less well off.

We can assume that in municipalities where many pupils have an academic background, teachers' expectations of pupils' performances are high [57,58], and the transition to baccalaureate school becomes the norm. Moreover, the socioeconomic composition of their neighborhood influences the way residents think and act through social interaction [59]. Even for the less privileged families, this path becomes a realistic option, as the social distance to the baccalaureate school decreases, which results in greater familiarity and calculation of costs, risks, and failure that are more in favor of the baccalaureate school:

**Hypothesis H5.** *The larger the proportion of socially privileged and well-educated families in a municipality, the more likely it is that an individual pupil will attend a baccalaureate school. In turn, the larger the proportion of families from lower social classes in a municipality, the less likely it is that an individual pupil will attend a baccalaureate school.*

Given the unequal cantonal structure of provisioning places at baccalaureate school, this paper explores whether inequality of social origin differs according to this structure. We can assume that educational provision has consequences for social inequalities; competition is stronger in cantons with fewer places at baccalaureate school [9,30]. Families from privileged social classes, who are well equipped with cultural, economic, and social capital and who consider the subjective costs and risks of successfully graduating from baccalaureate school to be low but the benefits to be high, will opt for baccalaureate school in any case and have more means to realize their plans. As a result, those pupils who succeed in moving on to baccalaureate school mostly come from the upper class. This competition decreases with an increasing number of places. Pupils from underprivileged families are thus less likely to be diverted from the baccalaureate school and have better chances for obtaining access [9]. In consequence, social inequalities in access should be narrowing.

**Hypothesis H6.** *As the proportion of places at baccalaureate school increases, inequality of access to baccalaureate school between pupils from privileged and from socially disadvantaged families decreases.*

However, the extent of competition also depends on the social composition of the population. Combet [7] suggests that, in a canton with a high proportion of well-educated families but with fewer places in the highest track, the mismatch between demands and available places intensifies competition. For this reason, it is important that our analysis controls for the social composition of the municipal pupil body. Furthermore, the study by Sixt [20] for Germany comes to the unexpected and contrary conclusion that it is children with parents with an academic background who especially benefit from a higher proportion of baccalaureate schools in a federal state.

### 3.4. *The Role of Track Allocation at the Lower-Secondary Level and of Sociodemographic Factors in Access to Baccalaureate School*

Track allocation at the lower-secondary level is crucial to gaining access to baccalaureate school. Pupils who attend the tracks with basic requirements have a substantially smaller chance of gaining access than their peers in the tracks with advanced requirements [3,11,16,17,28], even when controlling for competence in math and language [3,11,17,28,29,60]. The main reason for this is that the institutional regulations of baccalaureate schools often do not permit access when students are enrolled at the level with basic requirements. Attending a school with an integrated model in lower-secondary education (i.e., without level differentiation) guarantees more permeability in baccalaureate school admission [3,11,12].

Female and younger pupils [5,16,47] and pupils with good academic performance and school grades [5,47] are more likely to attend baccalaureate school. In addition, research has shown that pupils with a migration background have higher educational aspirations, thus leading to more ambitious educational choices and a preference for general education [5,28,61,62]. In addition, if they belong to the migration wave of the last 20 years, studies have revealed that they are not very familiar with the Swiss VET system and its track to university education [61,63]. The vocational path is often devalued in their country of origin, as labor market outcomes for VET graduates are less positive, and pathways to university education do not exist.

## 4. Data and Methods

### 4.1. *Data and Sample Selection*

In our study, we analyzed new and unique longitudinal register data for Switzerland (Longitudinal Analyses in Education (LABB)) provided by the Swiss Federal Statistical Office (FSO). These data were created by linking different educational statistics via the social-security number of the pupils. As a result, we were able to analyze a full survey on the educational trajectories of the entire population of all learners in the Swiss education system since 2011 [16] (p. 7). We focused on the cohort of 15- to 18-year-old pupils who graduated from lower-secondary school in 2013 and examined their initial transition to baccalaureate school over five years, leading up to 2018. Excluded were those pupils who had either not initially been part of the permanent resident population of Switzerland in 2013 (The permanent resident population includes all Swiss nationals with their main place of residence in Switzerland, as well as foreign nationals who have held a residence or permanent residence permit for at least 12 months (<https://www.bfs.admin.ch/bfs/en/home/statistics/population/effectif-change/population.html>, accessed on 10 March 2022), who had attended a program that was not part of compulsory education, or who had left Switzerland without entering certifying upper-secondary education [16] (p. 11).

For the construction of the social origin variable, we used information on the parents' highest level of educational attainment. In the LABB dataset, this is only available for 11% of the pupils of our cohort, as this information comes from the Swiss Structural Survey (unweighted  $n = 9501$ ), which is a 10% sample of the permanent resident population aged 15 years and over in private households.

### 4.2. *Method*

We applied logistic regressions on this sample to explain entry into baccalaureate school. This is the appropriate method since the small number of 26 cantonal units in Switzerland and the sample size did not allow us to carry out multilevel logistic analysis (MLA). (MLA could take into account that individuals are nested within municipalities and cantons and that the probability of school entry varies among those structural units.)

We calculated blockwise regression models to test whether communal and cantonal variables could make an additional explanatory contribution compared to the model with individual variables (see Tables A4 and A5 in Appendix A). Since the information on social

origin in the LABB data comes from the stratified sample of the structural survey, the cases were weighted accordingly in the regression models.

#### 4.3. Dependent Variable: Entry into Bacculaureate School after Compulsory Education

As a dependent variable, we examined whether pupils enter bacculaureate school within five years after completing compulsory schooling. Because the register data do not contain subjective information on educational aspirations and decisions, it is not possible to analyze the mechanisms leading to entry (i.e., to distinguish between intention to enter bacculaureate school and a successful transition). Thus, it is not possible to determine to what extent entry into bacculaureate school is a consequence of the interplay of educational aspirations of pupils and their families, of self-selection and investment, of regional educational offerings, and of selection processes by the sending and receiving schools.

#### 4.4. Explanatory Variables: Regional Structures of Cantons and Municipalities

As explanatory variables, we considered municipal and cantonal characteristics in our analysis (see Table A1 in Appendix A for the variable overview, including the descriptions). As an important regional variable at the cantonal level, we considered the *cantonal provisioning of places in bacculaureate schools*. This was measured by the mean proportion of pupils under 20 years of age attending bacculaureate school in a canton from 2009 to 2013 (as a percentage). It is based on the Statistics of Pupils and Students provided by the FSO. (Due to missing data, the value of the Obwald canton refers to 2012, and the value of the Appenzell Inner-Rhodes canton refers to 2016). In principle, it would be possible for the cantonal offering to be higher than the demand indicated by the pupils. However, this seems rather unlikely in view of the current situation of competition and selection, and it is therefore appropriate to use this indicator, especially since the cantons do not provide any official information on this.

The *municipal urbanization* variable distinguishes among urban, intermediate, and rural municipalities. Intermediate means dense peri-urban areas and rural centers. The municipal proportion of pupils in tracks with basic requirements and the proportion of pupils in tracks without level differentiation, which were calculated on the basis of the population of our cohort in the LABB data, are important for investigating differences in the chances to enroll in bacculaureate school between municipalities. The *municipal proportion of pupils in tracks with basic requirements* was measured as the proportion of pupils in tracks with basic requirements relative to all pupils in the tracks with basic and advanced requirements to capture the extent of segregation within the tracked school model. As Figure 1 shows, the integrated school model is anchored differently in the cantons, and the proportion of pupils in tracks without level differentiation varies greatly among municipalities. (For 20 municipalities, mainly in the canton Valais, where all pupils attend tracks without level differentiation, we imputed the cantonal median of the proportion of pupils in tracks with basic requirements.) The *proportion of pupils in tracks without level differentiation* was measured as the proportion of pupils in tracks without level differentiation relative to all pupils of the population of our cohort in a municipality. All the variables at the municipal level refer to the pupils' municipality of residence at the end of compulsory schooling in 2013.

We used the social composition of the entire body of pupils to analyze and control for the *social composition of the population in a municipality*. (There are currently no ways to obtain or calculate the composition of the population by educational status at the municipality level. The Swiss Structural Survey contains information on the highest educational status in the household, but it is not representative for all municipalities.) For this purpose, we constructed two variables that measure the *proportion of pupils from western and from southern countries in a municipality*, respectively. The former category is an indicator of the proportion of highly qualified immigrants who belong to the migration wave of the last 20 years and who hold academic aspirations for their children, whereas the latter is a proxy for the proportion of less educated immigrants who belong to the migration wave of refugees and

low-qualified labor migration from the 1980s onward [21,64]. (For further information, see Appendix A Note A1 and Tables A2 and A3.)

#### 4.5. Control Variables: Completed Track at the Lower-Secondary Level and Sociodemographic Characteristics of Pupils

The LABB data do not contain any information on the pupils' academic performance. Therefore, individual achievement can only be indirectly and partially controlled for via the completed *track at the lower-secondary level*. Nevertheless, we should be aware that there is a considerable overlap in competence across track types [65].

We used two types of categorizations of the track at the lower-secondary level. For the first, we distinguished between pupils who attended *tracks with basic requirements* (including tracks with a special curriculum), *tracks without level differentiation*, and *tracks with advanced requirements*. For the second, we additionally differentiated the latter category into the *pre-baccalaureate track* (including all tracks of the various cantonal category systems that contain "Gymnasium" or "MAR" in their name) and the *general track with advanced requirements*.

With regard to the sociodemographic characteristics, we controlled for *gender* (dummy), *age* at the end of compulsory education (ordinal variable of 15 to 18 years), and *migration status* (i.e., born in Switzerland or abroad). *Social origin* was measured by the highest educational degree in the household (i.e., achieved by parents), where we distinguished between three categories: *academic education* (traditional university, university of applied sciences, or university of teacher education), *intermediate education* (diploma of secondary-level education like vocational education and training or baccalaureate, as well as professional education and training at the tertiary level), and *compulsory education* (primary or lower-secondary education).

#### 4.6. Reported Effects

To address our research questions, we report predicted margins (PM) and average marginal effects (AME) of entering baccalaureate school. PM are average predicted probabilities based on model estimation using logistic regression. AME in the sense of absolute distance measures are the percentage-point differences of the PM, and the significance test checks whether they are different from zero [66].

To answer our second research question, our focus is on the interaction effect between pupils' social origin and the cantonal provisioning of baccalaureate school places. This allows us to capture how social origin affects the transitional probability, depending on cantonal baccalaureate school provision. We visualized the inequality between pupils of different social origin by plotting the PM and AME of the group with the highest and the lowest status of parental education in comparison to the intermediate status of parental education.

## 5. Results

We present two models. In model 1, the completed track at the lower-secondary level comprises three categories (basic requirements, without level differentiation, and advanced requirements). By contrast, in model 2, we distinguish four categories by differentiating the track with advanced requirements into the pre-baccalaureate track and the general track with advanced requirements. Pupils who attended the pre-baccalaureate track had already entered the baccalaureate school at the lower-secondary level. For them, it is therefore less a question of managing a transition to baccalaureate school than a question of remaining or not being promoted and instead opting out and starting upper-secondary specialized school or applying for an apprenticeship.

In Section 5.1, we discuss the effect of these different tracks on enrolling in baccalaureate school. In Section 5.2, we answer the first research question by reporting how the regional structures of cantons and municipalities—such as the fluctuating cantonal offering of baccalaureate school places and the different composition of the pupil body in municipalities—impact access to baccalaureate school. To answer the second research

question, we present results on how inequality in access to baccalaureate school varies between pupils of different social origin according to the varying cantonal provision of places at baccalaureate school (Section 5.3). In answering the two research questions, we compare the results of each of the two models.

### 5.1. Completed Track at the Lower-Secondary Level

As we can see in Table 1 (model 1), the track at the lower-secondary level plays a crucial role. While the pupils who attended tracks with advanced requirements have a probability of 36% of advancing to baccalaureate school, the pupils in tracks with basic requirements in fact have hardly any chance (1%) of entering this school type. By contrast, the pupils who attended an integrated model without level differentiation have a higher probability of 10%.

Model 2, however, demonstrates that the pupils who entered the pre-baccalaureate track during their lower-secondary schooling are most likely to attend the baccalaureate school at the upper-secondary level. Their probability is nearly 83%, whereas the probability of the pupils in the general track with advanced requirements drops to the level of those in the integrated model. Several predictors of the explanatory regional variables change as a result of this differentiation of the level with advanced requirements. We will discuss this in more detail in Section 5.2.

### 5.2. Cantonal and Municipal Factors in Access to Baccalaureate School

Along with the completed track at the lower-secondary level and sociodemographic factors, regional factors play a substantial role in determining baccalaureate school entrance. Tables A3 and A4 in Appendix A show that the regression models improve if we add cantonal and municipal factors. McFadden's Adj  $R^2$  increases from 24% to 28% (model 1a to model 1c) and from 49% to 53% (model 2a to model 2c), and Akaike decreases to an extent that provides very strong support for the augmented models. Although McFadden's Adj  $R^2$  should be interpreted with caution, we note that it is about twice as high for model 2 than for model 1. This suggests that model 2 with the completed 4-category track at the lower-secondary level fits better than model 1.

Unsurprisingly, our analyses show a positive effect of the *cantonal provisioning of places at baccalaureate schools* on the individual transition of lower-secondary school graduates. The greater the supply of baccalaureate school places in a canton, the higher the probability that a pupil will attend. This is consistent with previous research [13] and with our assumption in Hypothesis H1. This can be explained by the fact that the available supply of places is generally smaller than the number of pupils who aspire toward baccalaureate school. If the number of available places is expanded, more pupils transfer to baccalaureate school.

Let us now turn to the relation between the communal structure of lower-secondary education and attendance of baccalaureate school. The results of both models are consistent with Hypothesis H4 and show that the *urbanization of a municipality* influences the rate of transition to baccalaureate school. If lower-secondary school graduates live in urban communities, they are more likely to choose baccalaureate school than if they live in an intermediate area (e.g., dense peri-urban areas or rural centers) or in a rural area. This can be explained by the fact that the supply of apprenticeship places as an alternative educational path may be lower, and the supply of well-qualified jobs in the service sector may be higher, which fosters academic aspirations.

The *municipal proportion of pupils in tracks with basic requirements* shows a significant negative effect at the 10% significance level in model 2 but not in model 1. We can conclude that as soon as the pupils in the pre-baccalaureate track are recorded separately, there are signs of the expected relation as spelled out in Hypothesis H2. In municipalities with a larger proportion of pupils in tracks with basic requirements, vocational education and training is a valid alternative to baccalaureate school. This decreases the probability of a pupil entering baccalaureate school.

**Table 1.** Access to baccalaureate school after compulsory education by completed track at the lower-secondary level, showing cantonal, municipal, and sociodemographic factors.

Variable	Categories	Model 1			Model 2			Std. Err.	
		PM	AME	Std. Err.	PM	AME	Std. Err.		
Lower-secondary track	basic requirements (ref.)	0.011	/	/		0.010	/	/	
	without level differentiation	0.103	0.092	0.016	***	0.142	0.131	0.021	***
	advanced requirements/mod. 2: general adv. require.	0.361	0.351	0.007	***	0.162	0.151	0.006	***
	mod. 2: pre-baccalaureate r.					0.826	0.816	0.011	***
Cantonal provisioning of baccalaureate school places in %		/	0.008	0.000	***	/	0.006	0.000	***
Municipal urbanization	urban (ref.)	0.281	/	/		0.277	/	/	
	intermediate	0.256	−0.02	0.011	*	0.255	−0.023	0.008	**
	rural	0.237	−0.04	0.012	***	0.247	−0.030	0.009	**
Municipal proportion of pupils in tracks with basic requirements in %		/	0.000	0.000		/	0.000	0.000	†
Municipal proportion of pupils in tracks without level differentiation in %		/	0.002	0.000	***	/	0.000	0.000	
Municipal proportion of pupils from Western countries in %		/	0.004	0.001	**	/	0.000	0.001	
Municipal proportion of pupils from Southern countries in %		/	−0.001	0.001	*	/	0.000	0.000	
Gender	male (ref.)	0.247	/	/		0.252	/	/	
	female	0.285	0.038	0.008	***	0.281	0.029	0.006	***
Social origin	compulsory education	0.153	−0.064	0.015	***	0.217	−0.024	0.011	*
	intermediate education (ref.)	0.217	/	/		0.242	/	/	
	academic education	0.437	0.219	0.012	***	0.354	0.112	0.009	***
Migration status	born in Switzerland (ref.)	0.265	/	/		0.265	/	/	
	born abroad	0.281	0.015	0.017		0.283	0.018	0.012	
Age	in years	/	−0.025	0.007	**	/	−0.033	0.005	***
Cantonal provisioning of baccalaureate school places in % * social origin									
	compulsory education	/	/	/		/	/	/	
	intermediate education (ref.)	/	/	/		/	/	/	
	academic education	/	/	/		/	/	/	

Predicted margins (PM) and average marginal effects (AME; with standard errors and significance: †  $p < 0.10$  \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ ) were postestimated after logistic regressions for model 1 (with the 3-category track at the lower-secondary level as a factor) and model 2 (with the 4-category track at the lower-secondary level). Since the information on social origin in the LABB data comes from the stratified sample of the Structural Survey, the cases are weighted accordingly:  $n = 9501$  (unweighted number), extrapolated  $N = 83,608$ , number of strata (zones) = 27. Data source: FSO, Longitudinal Analyses in Education (LABB).

By contrast, the probability of a pupil entering baccalaureate school increases with the *municipal proportion of pupils in tracks without level differentiation* in model 1 but not in model 2. The larger the proportion of pupils within models without established level differentiation in a municipality, the higher the probability of an individual pupil attending such a model, and the higher the probability that the pupil will enter baccalaureate school after compulsory education (Hypothesis H3). We explain this positive influence by the fact that inclusive education leaves more options open for individual pupils and enables greater institutional permeability. However, it seems that this municipal effect is lost when differentiation is implemented. We were unable to find a conclusive explanation for this.

The social composition of the pupil body in the municipalities also plays an important role in model 1 (Hypothesis H5). The higher the proportion of pupils from western countries in a municipality, the more likely school graduates are to enter baccalaureate school. In contrast, as we postulated, the municipal proportion of pupils from southern countries indicates a negative relationship. These effects show that communal differences in the social composition of the pupil body are important for entry into baccalaureate school and that pupils in less well-off communities have fewer opportunities. However, this relationship disappears as soon as the pupils from the pre-baccalaureate school are introduced separately (model 2). We can conclude that in municipalities with a high proportion of academically educated parents, children often attend the pre-baccalaureate school, and as a result, this municipal effect is already absorbed in the fourth category by this earlier transition. Descriptive analyses of the social origin of the pupils in the two tracks with advanced requirements confirm this assumption. In 42% of the cases, the pupils in the pre-baccalaureate track originate from an academically educated family, whereas this percentage is only 19% for pupils in the general track with advanced requirements.

### 5.3. Sociodemographic Factors in Access to Baccalaureate School

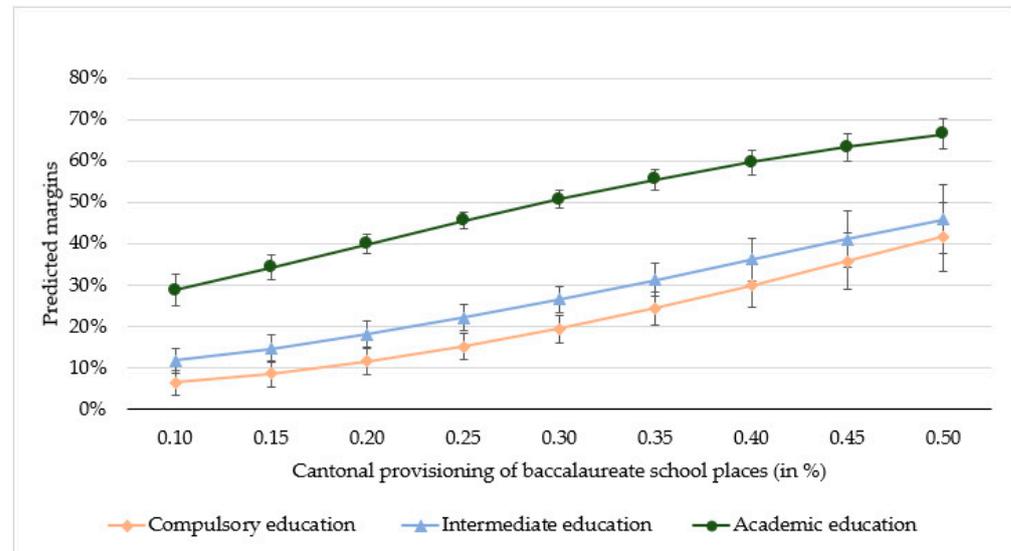
The sociodemographic factors of gender, social origin, and age influence the transition to baccalaureate school which, *ceteris paribus*, complies with the state of research. Female pupils are more likely to start baccalaureate school than male pupils are. Pupils with at least one academically educated parent are much more likely to transfer to a baccalaureate school, and pupils whose parents completed no more than compulsory schooling are significantly less likely to do so, especially when we compare them with those pupils whose parents achieved an intermediate educational degree. The younger the pupils are, the more likely they are to transfer. Whether a pupil was born in Switzerland or abroad, on the other hand, seems to be altogether irrelevant.

### 5.4. Inequality Due to Cantonal Structures of Educational Provision

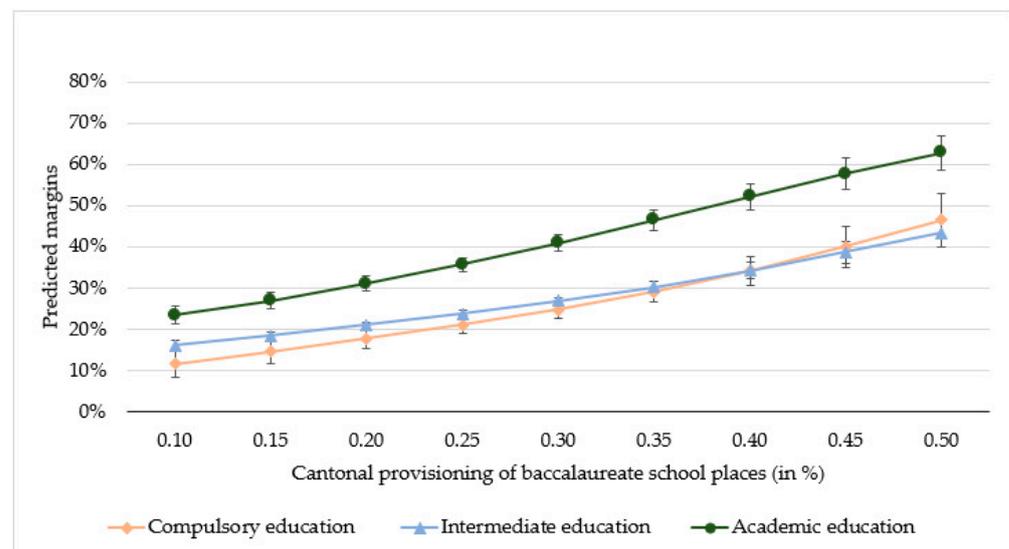
Does inequality between pupils of different social origin vary due to different cantonal educational provisioning of baccalaureate places? On average, pupils with a family background of academic education have a transitional probability of 44% (see Table 1, model 1); those with a family background of intermediate education have a probability of 22%; and those with a family background of compulsory education have a probability of 15%. These differences are statistically significant. This means that pupils from privileged family backgrounds differ much more in their probability of entering baccalaureate school from the group with an intermediate family educational background than the latter from the group with the lowest family educational background. These differences between the probabilities of the three social groups appear to narrow when the track with advanced requirements is split into the pre-baccalaureate track and the general track with advanced requirements (Table 1, model 2).

Figure 3 (model 1) and Figure 4 (model 2) show how the probability of all three groups (academic education = green dots, intermediate education = blue triangle, and compulsory education = orange rhombus) depends on the cantonal provisioning of places. It increases for all groups as the cantonal provisioning of baccalaureate school places increases (Hypothesis H1).

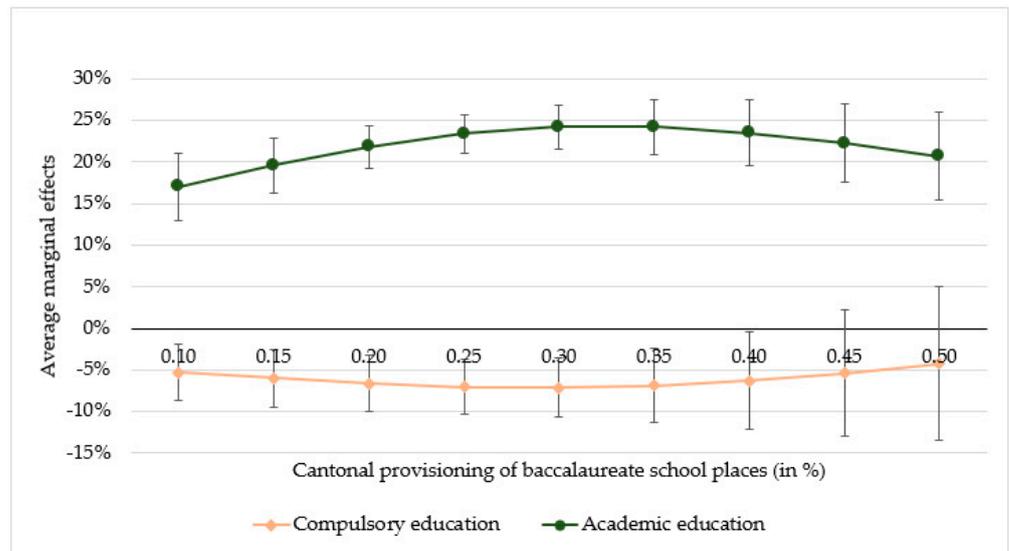
Figure 5 (model 1) and Figure 6 (model 2) show that the probability does not increase equally for all groups, although the interaction effects in the models are not significant (see Tables A4 and A5). However, with the plots of the PM and AME including confidence intervals, it can be shown at what proportion of the cantonal provisioning of baccalaureate school places significant differences exist between the groups with different familial educational backgrounds.



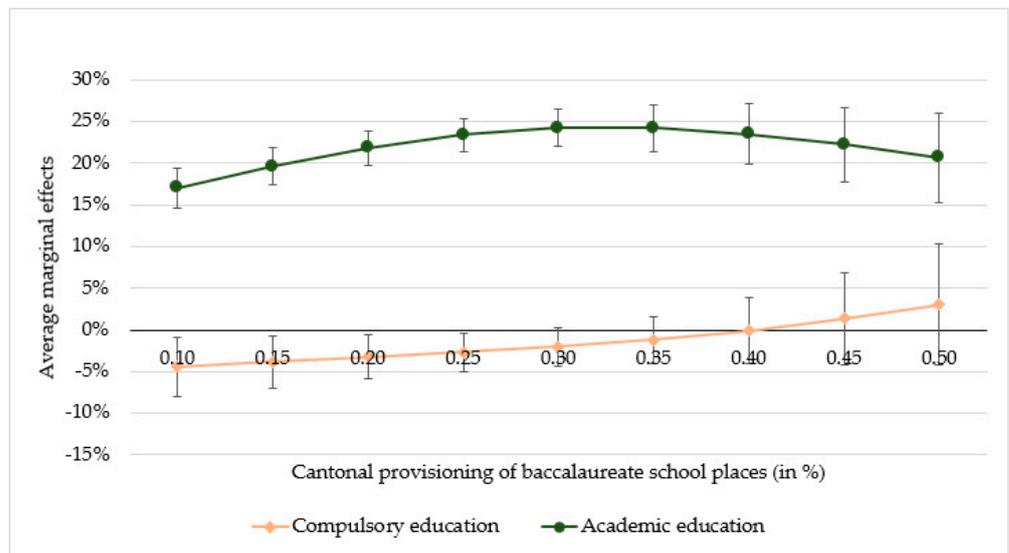
**Figure 3.** Predictive margins with 95% confidence intervals of entering baccalaureate school by cantonal provisioning of baccalaureate school places and familial educational background (controlling for all explanatory and control variables of model 1). Data source: FSO, Longitudinal Analyses in Education (LABB).



**Figure 4.** Predictive margins with 95% confidence intervals of entering baccalaureate school by cantonal provisioning of baccalaureate school places and familial educational background (controlling for all explanatory and control variables of model 2). Data source: FSO, Longitudinal Analyses in Education (LABB).



**Figure 5.** Average marginal effects with 95% confidence intervals of entering baccalaureate school by cantonal provisioning of baccalaureate school places for pupils of compulsory and academic familial educational background compared to pupils of intermediate familial educational background (controlling for all explanatory and control variables of model 1). Data source: FSO, Longitudinal Analyses in Education (LABB).



**Figure 6.** Predictive margins with 95% confidence intervals of entering baccalaureate school by cantonal provisioning of baccalaureate school places for pupils of compulsory and academic familial educational background compared to pupils of intermediate familial educational background (controlling for all explanatory and control variables of model 2). Data source: FSO, Longitudinal Analyses in Education (LABB).

If we look first at the pupils from academic families, there is some evidence that they benefit more from an expansion of places at baccalaureate school than the two other social groups. The differences between the average marginal effects increase slightly between the socially privileged group of academic offspring (green dots) and the two other social groups as the availability of places increases (i.e., inequality in access is growing). The observed scissors effect decreases when the availability of places is at 30% to 40% and above. And so does inequality of access. At this reversal point, the inequality in model 1 is nearly 20 percentage points and in model 2, it is over 10 percentage points.

The picture is different when comparing pupils with the intermediate (zero-line) to the pupils with the lowest family educational background in model 1 (orange rhombus in Figure 5). Here, we can see that their probabilities of attending baccalaureate school differ significantly but only slightly to the advantage of the first group, up to an availability of about 40% of places at baccalaureate school. At higher percentages, the confidence intervals overlap (i.e., there is no longer a statistically significant difference between the two groups). In other words, there are no longer inequalities in opportunities of access between the two social groups. Model 2 even shows no significant difference between the two groups for all types of cantonal provisioning of baccalaureate school places (Figure 6).

We can thus conclude that the probabilities of access between these two social groups differ little or not at all, regardless of the supply of places at baccalaureate school. There is evidence from model 1 that a very high percentage of places, as we find in the cantons Ticino (41%) and Geneva (47%) (see Table A6 in Appendix A), eliminates any inequalities.

Contrary to our assumption in Hypothesis H6 that the probability of access for the less privileged pupils improves as the number of places increases, the relationship turns out to be curvilinear. Inequality between the most privileged group—pupils from academically educated parents—and the other two groups first increases as the supply of places rises but then starts to decrease again at around 30% to 40%. However, there is no statistical evidence that inequality would be significantly smaller with a very large supply of places compared to a very small supply. Moreover, the range of the confidence interval (i.e., the uncertainty as to where the true value lies exactly) increases as the number of places increases because there are fewer cantons in the upper range.

Furthermore, an individual's probability of attending baccalaureate school does not differ substantially between pupils with parents who completed their education with no more than compulsory schooling and pupils with parents who completed an upper-secondary level or tertiary level education.

### *5.5. Possible Explanations for the Interplay between Social Origin and Cantonal Structures of Educational Provision in Access to Baccalaureate School*

How might we explain the slightly convex relationship that we observed between the provision of places at baccalaureate school and the degree of inequality between the three social groups? With three different situations in mind, we could refine our initial hypothesis that the probability of access for lesser privileged pupils improves as the number of places increases. In cantons with very limited numbers of places at baccalaureate school (e.g., Glarus at 14%), strong competition exists [9,30]. As a consequence, we assume that only some of the pupils from the most privileged social group succeed in moving on to baccalaureate school. In cantons with a higher availability of baccalaureate school places (e.g., Zug at 25%, Neuchâtel at 29%), we suppose that the pupils from the most privileged social group who previously had no chance of attending baccalaureate school in cantons with limited availability are now succeeding in gaining access. Nevertheless, competition would persist and make it difficult for pupils from lower social classes to enroll. Because a larger proportion of pupils from the most privileged social group would manage to enroll in baccalaureate schools, inequality would increase. This would be in line with the results of Sixt for Germany [20].

In cases where there is greater availability of baccalaureate school places, such as in the canton of Basle City (36%) or Geneva (47%), we suppose that the demand of the most privileged families for places at baccalaureate school has reached saturation. In this situation, competition would be moderate, and pupils from less privileged families would have better chances to enroll in a baccalaureate school. Inequality would correspondingly decrease. This phenomenon is in line with the theory of maximally maintained inequalities, which holds that “transition rates and odds ratios between social origins and educational transitions remain the same from cohort to cohort unless they are forced to change by increasing enrollments [ . . . ] If the demand for a given level of education is saturated for the upper classes, [ . . . ] then the odds-ratios decrease (the association between social

origin and education is weakened)" [67] (p. 56f). The authors of this text are referring to the phenomenon of uneven development of transitions to high school for different social groups among historical cohorts in the context of educational expansion. Applying the theory to our area of research means that we assume that inequality in the probability of entering baccalaureate school among the upper and lower social classes will persist until such demand is saturated among the upper classes. After this saturation point, we can expect inequality between the pupils from academically educated families and the two other groups to decrease. (We would like to thank one of the anonymous reviewers for this helpful advice.)

The fact that there are pronounced differences in access opportunities between the group of pupils with an academic family background and the other two social groups, yet only small differences between the latter, supports the thesis that baccalaureate school serves mainly as a place of social reproduction of the most privileged class.

## 6. Summary and Discussion

In this paper, we focused on the transition from compulsory education to baccalaureate school in the Swiss federally organized educational system. Baccalaureate school is the most demanding track in terms of academic performance and can be considered the royal road to universities. The pronounced autonomy of the 26 Swiss cantons in educational policy and their delegation of legislative and administrative tasks to municipalities give rise to substantial variance in institutional conditions at the cantonal and municipal levels. When looking at the cantonal transition rates to baccalaureate school, we see an impressive variance, with the lowest proportion being 13% and the highest over 50%. Such large differences cannot be explained solely by cantonal differences in pupils' academic performance. Instead, we suggest these variances are the result of different educational and socio-spatial structures. In addition to this regional inequality, social inequality also exists in baccalaureate school attendance. Pupils from socially privileged families attend baccalaureate school more often than pupils from socially disadvantaged backgrounds. However, whether this inequality varies between the cantons has not yet been comprehensively investigated.

The aim of this paper was twofold. First, by drawing on national longitudinal register data, we investigated how institutional conditions at the cantonal and municipal levels impact access to baccalaureate school (regional inequalities). Second, we analyzed whether inequality of access between different groups of social origin changes depending on one of these conditions, namely, on the cantonal availability of places at baccalaureate school (social inequalities).

Our results point to three central findings. First, with regard to regional inequalities, while controlling for the individually completed track at the lower-secondary level and the sociodemographic factors of gender, social origin, migration background, and age, we were able to demonstrate that institutional conditions at the cantonal and municipal levels structure the probability of transition. The greater the provision of places at baccalaureate school in a canton, the better the chances for pupils in gaining access. Aspirations for baccalaureate school are usually more widespread than the available places in a canton. As the availability of those places increases, more pupils have the opportunity to transition to baccalaureate school.

On the municipal level, the urbanization of a municipality, the proportion of pupils in the different tracks of varying requirements, and the social composition of the pupil body are relevant factors that impact the pupils' chances of entering baccalaureate school. Living in an urban community encourages the transition to baccalaureate school, as the supply of apprenticeship places as an alternative educational path is probably lower, and the demand for academic jobs is likely higher. There are indications that a higher municipal proportion of pupils in the track with basic requirements leads to a smaller probability that individual pupils will transition to baccalaureate school because the value placed on the vocational path is greater. In the same vein, a higher proportion of pupils in tracks without differentiation between levels increases their individual probability of entering

baccalaureate school, because the likelihood also increases that they will be assigned to this track that allows for a higher educational permeability.

As for the social composition of the body of pupils, our findings substantiate that in communities with many well-educated parents, the probability increases that an individual pupil will enter baccalaureate school. We explain this finding on the grounds of how a neighborhood of this kind might influence the way parents familiarize themselves with academic education and calculate the costs and risks of an academic pathway [59]. In such a neighborhood, attending baccalaureate school becomes the norm and a reasonable option for the less educated families as well. We can conclude that in municipalities with a high proportion of academically educated parents, children often attend the pre-baccalaureate school, and as a result of this earlier transition, this municipal effect is already absorbed into the fourth category of our variable of the lower-secondary track. Descriptive analyses of the social origin of the pupils in the two tracks with advanced requirements confirm this assumption. In 42% of the cases, pupils in the pre-baccalaureate track originate from an academically educated family, whereas this percentage is only 19% for pupils in the general track with advanced requirements. Our results also suggest that it is precisely in these municipalities that a very large number of pupils with an academic family background access the pre-baccalaureate track at the lower-secondary level. Therefore, they effectively no longer have to succeed in a transition; they have only to be promoted.

Second, with regard to social inequalities, the degree of inequality between the group of pupils with the intermediate and lowest family educational background is very small and often not significant, irrespective of the number of available places at baccalaureate school in a canton. By contrast, inequality between the group of the highest (i.e., academic) family educational background and the two other groups is substantial and significant, which supports the thesis that baccalaureate school serves mainly as a place of social reproduction of the most privileged class.

Third, this inequality between pupils from academically educated families and pupils from less educated families varies in a nonlinear relationship, depending on the supply of places at baccalaureate school. Contrary to the hypothesis that more available places at baccalaureate school reduce inequality as a result of reduced competition between social classes, we found that with an increasing cantonal supply of places, the already socially privileged pupils benefit even more, and inequality between pupils from academically educated families and other social groups widens (the scissors effect). We can explain this by the fact that the academic aspirations of the parents with an academic background are not yet saturated. As they possess more resources to support their children than parents of a lower social origin, the probability increases that their children will be able to enter baccalaureate school. Only when the availability of places is around 35% does the demand of these families become saturated, which is in line with the theory of maximally maintained inequality [67]. In cantons beyond this reversal point, the probabilities of access among the three social groups converge to some extent. However, there is no statistical evidence that inequality would be significantly smaller with a very large supply of places compared to a very small supply.

In light of the recurrent debate in educational politics and media on the matter of *regional inequalities* in access to baccalaureate school, our study shows that institutional conditions at the cantonal and municipal levels, conceptualized as regulative, normative, and cultural–cognitive pillars [31], frame and structure individual motivations, aspirations, opportunities, decisions, and actions with regard to attending baccalaureate school. These institutional conditions relate directly to the education system (structures, offers, and regulations), to social, housing, and labor-market policies, as well as to strongly rooted cultural values and norms regarding academic education.

In view of political and scientific discussions on *social inequalities* and their policy implications, our findings indicate that simply increasing the number of places at baccalaureate school does not simultaneously reduce inequality. Of course, more pupils do gain access, and this does include those from disadvantaged backgrounds. However, in the

competition over access, the privileged social classes benefit even more from the increase in available places. However, this should not necessarily lead to the conclusion that the number of places should not be increased. If politicians want more pupils entering university education as a response to a larger skills shortage [21], this is one possible way, and one that also opens up this pathway to disadvantaged social classes.

However, the methodological limitations of this study must also be considered. The first is the fact that data from 26 of the cantons did not allow for the computation of multilevel statistical analyses (MLA), which would be the more appropriate statistical procedure. It should nevertheless be noted that previous attempts to calculate MLA for model 1 based on an auxiliary construct for social origin for the entire population, which were criticized from a methodological standpoint in an earlier version of this paper, have led to similar results. Both individual and regional factors influence entry into baccalaureate school in similar ways, and a curvilinear relationship between the cantonal provision of baccalaureate school places and social origin has also been demonstrated.

A second limitation arises out of the impossibility of controlling for pupils' achieved competences in math and language upon their completion of lower-secondary education. Be that as it may, it is not reasonable to expect large differences between cantons in pupils' academic potential, and furthermore, we controlled for the track of lower-secondary education as well as for social origin. We therefore characterize these two stated limitations as minor.

**Author Contributions:** Conceptualization, R.J.L. and C.I.; methodology, R.J.L., C.I. and A.P.B.; validation, R.J.L., A.P.B. and C.I.; formal analysis, A.P.B.; data curation, A.P.B.; writing—original draft preparation, R.J.L. and A.P.B.; writing—review and editing, R.J.L., A.P.B. and C.I.; visualization, A.P.B.; project administration, R.J.L.; funding acquisition, R.J.L. All authors have read and agreed to the published version of the manuscript.

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**Data Availability Statement:** The analyzed data (hsf2018\_public\_p2 with additional information from lf2018\_feo2ter) are available on request from the FSO (<https://www.bfs.admin.ch/bfs/de/home/statistiken/bildung-wissenschaft/erhebungen/lab.assetdetail.5046491.html>, accessed 10 March 2022).

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## Appendix A

Table A1. Descriptives.

Variable	Categories/Units	Percentages	Mean	Median	Std. Dev.	Min.	Max.	Percentile	
								25th	75th
Entry into baccalaureate school	entry	26.7							
	no entry	73.3							
Lower-secondary track	basic requirements (ref.)	27.5							
	without level differentiation	5.5							
	advanced requirements	67.0							
	general advanced requirements pre-baccalaureate requirements		46.6 20.4						
Cantonal provisioning of baccalaureate school places in %			23.7	21.0	8.3	14.3	47.2	18.7	27.4
Municipal urbanization	urban (ref.)	57.4							
	intermediate	23.9							
	rural	18.7							
Municipal proportion of pupils in tracks with basic requirements in %			32.6	34.7	13.3	0.0	100.0	24.7	40.0
Municipal proportion of pupils in tracks without level differentiation in %			6.0	0.9	16.7	0.0	100.0	0.0	2.7
Municipal proportion of pupils from Western countries in %			3.5	3.0	3.1	0.0	36.0	1.0	5.0
Municipal proportion of pupils from Southern countries in %			11.9	11.0	9.5	0.0	68.0	5.0	18.0
Gender	male (ref.)	50.7							
	female	49.3							
Social origin	compulsory education	14.3							
	intermediate education (ref.)	65.9							
	academic education	19.8							
Migration status	born in Switzerland (ref.)	88.7							
	born abroad	11.3							
Age	in years		15.9	16.0	0.7	15.0	18.0	15.0	16.0

Analysis for the weighted sample (unweighted  $n = 9501$ ). Data source: FSO, Longitudinal Analyses in Education (LABB).

**Note A1.** Information on the construction of the variable *proportion of pupils from Western and southern countries in a municipality*.

The pupils were divided into three groups on the basis of their nationality as an indicator of their social origin [68]. We distinguished between pupils with nationalities from Switzerland, Italy, and Spain, from western countries, and from southern countries. The second category comprises pupils with nationalities from Western, Northern, and Eastern European countries (including Russia), Anglo-Saxon countries, and China and India. Two-thirds of these pupils have German, French, or Austrian nationalities. The third category includes pupils with nationalities from Southern and Southeastern European countries and all other countries of the world. Almost 80% come from Portugal, Turkey, or Balkan countries. Descriptive analysis shows that these groups differ substantially regarding the highest educational degree of their parents (see Table A2). Pupils with nationalities from western countries have the most privileged educational backgrounds, whereas those with nationalities from southern countries have the least privileged backgrounds. The pupils with Swiss, Italian, or Spanish nationalities take a middle position regarding social origin. The socio-national origin variable therefore blends parental education with different waves of migration. Table A3 shows the composition of the largest nationality groups (unweighted  $n > 50$ ) according to the highest educational attainment of the household.

**Table A2.** Lower-secondary graduates in 2013 by socio-national origin and highest educational attainment of the household.

Socio-National Origin	Highest Educational Attainment of the Household				Total
	Not Specified	Compulsory School	Upper-Secondary Level	Tertiary Level	
Switzerland, Italy, Spain (ref.)	6%	7%	46%	41%	100%
Western countries	7%	6%	25%	62%	100%
Southern countries	11%	53%	27%	9%	100%
Total	7%	13%	43%	38%	100%

Analysis for the weighted sample of our cohort (13- to 20-year-old pupils; unweighted  $n = 10,241$ ). Data source: FSO, Longitudinal Analyses in Education (LABB).

**Table A3.** Lower-secondary graduates in 2013 by nationality and highest educational attainment of the household.

Nationality	Highest Educational Attainment of the Household				Total
	Not Specified	Compulsory School	Upper Secondary-Level	Tertiary Level	
Switzerland	6%	7%	46%	42%	100%
Germany	10%	3%	32%	55%	100%
France	1%	10%	27%	62%	100%
Italy	10%	23%	53%	13%	100%
Portugal	10%	72%	15%	3%	100%
Spain	7%	43%	32%	18%	100%
Turkey	14%	52%	26%	9%	100%
Serbia	8%	41%	45%	7%	100%
Croatia	7%	28%	55%	11%	100%
Bosnia and Herzegovina	14%	42%	38%	6%	100%
Northern Macedonia	9%	62%	24%	5%	100%
Kosovo	17%	48%	26%	8%	100%
Other nationalities	8%	26%	25%	40%	100%
Total	7%	13%	43%	38%	100%

Analysis for the weighted sample of our cohort (13- to 20-year-old pupils; unweighted  $n = 10,241$ ; nationalities with unweighted  $n > 50$ ). Data source: FSO, Longitudinal Analyses in Education (LABB).

**Table A4.** Completed 3-category lower-secondary track, with sociodemographic and regional factors for entry into baccalaureate school.

Variable	Categories	Model 1a			Model 1b			Model 1c			Model 1d		
		Coeff.	Std. Err.		Coeff.	Std. Err.		Coeff.	Std. Err.		Coeff.	Std. Err.	
Lower-secondary track	basic requirements (ref.)	3.129	0.326	***	3.089	0.329	***	2.538	0.364	***	2.531	0.365	***
	without level differentiation advanced requirements	4.283	0.301	***	4.394	0.303	***	4.414	0.305	***	4.414	0.305	***
Gender	male (ref.)												
	female	0.247	0.061	***	0.271	0.061	***	0.273	0.061	***	0.274	0.061	***
Social origin	compulsory education	−0.225	0.385	†	−0.474	0.122	***	−0.492	0.125	***	−0.795	0.385	*
	intermediate education (ref.) academic education	1.434	0.210	***	1.407	0.069	***	1.364	0.070	***	1.170	0.210	***
Migration status	born in Switzerland (ref.)												
	born abroad	0.274	0.120	*	0.124	0.117		0.108	0.119		0.109	0.120	
Age	in years	−0.378	0.052	***	−0.193	0.052	***	−0.178	0.052	**	−0.179	0.052	**
Cantonal provisioning of baccalaureate school places in %					0.059	0.003	***	0.059	0.004	***	0.056	0.004	***
Municipal urbanization	urban (ref.)												
	intermediate rural							−0.173 −0.313	0.077 0.089	* ***	−0.173 −0.315	0.077 0.089	* ***
Municipal share of pupil in tracks with basic requirements in %								0.001	0.003		0.001	0.003	
Municipal share of pupil in tracks without level differentiation in %								0.014	0.003	***	0.014	0.003	***
Municipal share of pupils from Western countries in %								0.026	0.009	**	0.025	0.009	**
Municipal share of pupils from Southern countries in %								−0.009	0.004	*	−0.009	0.004	*
Cantonal provisioning of baccalaureate school places in % * social origin	compulsory education										0.011	0.012	
	intermediate education (ref.) academic education										0.008	0.008	
Constant		0.689	0.845		−3.745	0.911	***	−3.969	0.926	***	−3.886	0.929	***
McFadden's Adj R <sup>2</sup>		0.244			0.272			0.278			0.278		
AIC*n		73,366			70,580			70,025			70,016		

Blockwise logistic regressions for model 1; significance: †  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . Since the information on social origin in the LABB data comes from the stratified sample of the Structural Survey, the cases are weighted accordingly:  $n = 9501$  (unweighted number), extra-polated  $N = 83,608$ , number of strata (zones) = 27. For the stratified sample no measures of fit are reported. Therefore, McFadden's Adj R<sup>2</sup> and AIC\*n are based on a weighted logistic regression with clustered standard errors for zones. Data source: FSO, Longitudinal Analyses in Education (LABB).

**Table A5.** Completed 4-category lower-secondary track, with sociodemographic and regional factors for entry into baccalaureate school.

Variable	Categories	Model 2a			Model 2b			Model 2c			Model 2d		
		Coeff.	Std. Err.		Coeff.	Std. Err.		Coeff.	Std. Err.		Coeff.	Std. Err.	
Lower-secondary track	basic requirements (ref.)												
	without level differentiation	3.048	0.328	***	3.052	0.335	***	3.054	0.367	***	3.055	0.368	***
	general advanced requirements	3.167	0.304	***	3.271	0.308	***	3.246	0.308	***	3.245	0.309	***
	pre-baccalaureate requirements	6.812	0.312	***	7.080	0.318	***	7.063	0.318	***	7.061	0.319	***
Gender	male (ref.)												
	female	0.311	0.074	***	0.350	0.076	***	0.353	0.076	***	0.355	0.077	***
Social origin	compulsory education	0.102	0.133		−0.206	0.129		−0.230	0.131	†	−0.915	0.409	*
	intermediate education (ref.) academic education	1.299	0.086	***	1.246	0.088	***	1.202	0.089	***	0.926	0.235	***
Migration status	born in Switzerland (ref.)												
	born abroad	0.433	0.135	**	0.225	0.138		0.213	0.139		0.221	0.140	
Age	in years	−0.702	0.060	***	−0.397	0.063	***	−0.404	0.063	***	−0.405	0.063	***
Cantonal provisioning of baccalaureate school places in %					0.080	0.004	***	0.077	0.004	***	0.072	0.005	***
Municipal urbanization	urban (ref.)												
	intermediate rural							−0.277	0.101	**	−0.277	0.102	**
								−0.371	0.116	**	−0.375	0.117	**
Municipal share of pupil in tracks with basic requirements in %								−0.005	0.003		−0.005	0.003	†
Municipal share of pupil in tracks without level differentiation in %								−0.001	0.003		−0.001	0.003	
Municipal share of pupils from Western countries in %								0.005	0.012		0.005	0.012	
Municipal share of pupils from Southern countries in %								−0.002	0.005		−0.002	0.005	
Cantonal provisioning of baccalaureate school places in % * social origin													
	compulsory education										0.023	0.012	†
	intermediate education (ref.)										0.011	0.008	
	academic education												
Constant		5.723	0.989	***	−1.189	1.074		−0.688	1.089		−0.525	1.101	
McFadden's Adj R <sup>2</sup>		0.490			0.529			0.530			0.531		
AIC*n		49,427			45,706			45,558			45,526		

Blockwise logistic regressions for model 2; significance: †  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . The cases are weighted for the stratified sample:  $n = 9501$  (unweighted number). See notes of Table A4. Data source: FSO, Longitudinal Analyses in Education (LABB).

**Table A6.** Cantonal provisioning of baccalaureate school places by canton.

Abbrev.	Canton	Cantonal Provisioning of Baccalaureate School Places in %
GL	Glarus	14.29
TG	Thurgovia	14.33
SG	St Gall	14.45
SH	Schaffhouse	15.99
UR	Uri	17.09
AR	Appenzell Outer-Rhodes	17.12
AG	Argovia	17.13
SO	Soleure	17.44
OW	Obwald	18.18
AI	Appenzell Inner-Rhodes	18.70
SZ	Schwyz	18.74
BE	Berne	19.74
GR	Grisons	19.76
NW	Nidwald	20.18
VS	Valais	20.72
LU	Lucerne	20.99
ZH	Zurich	21.70
JU	Jura	23.53
ZG	Zug	24.83
BL	Basle-Country	25.86
FR	Friburg	27.44
NE	Neuchâtel	28.89
VD	Vaud	34.15
BS	Basle-City	36.23
TI	Ticino	40.53
GE	Geneva	47.22

Indicator measured by the mean proportion of pupils under 20 years of age attending baccalaureate school in a canton from 2009 to 2013 (in %). Data source: FSO, Statistics of Pupils and Students.

## References

- Goastellec, G.; Välimaa, J. Expliquer les inégalités d'accès aux diplômes en Finlande et en Suisse (1950–2004): Des structures scolaires aux politiques sociales. *Educ. Société* **2017**, *38*, 105–121. [\[CrossRef\]](#)
- Leemann, R.J.; Esposito, R.S.; Imdorf, S. Governance mechanisms in the institutionalisation of upper secondary education in Switzerland. Insights from the policy debates on the status of VET and general education. In *Governance Revisited: Challenges and Opportunities for VET*; Bürgi, R., Gonon, P., Eds.; Peter Lang: Bern, Switzerland, 2021; pp. 243–271.
- Combet, B. Zum Einfluss von primären und sekundären Effekten der sozialen Herkunft beim zweiten schulischen Übergang in der Schweiz. Ein Vergleich unterschiedlicher Dekompositions- und Operationalisierungsmethoden. *Swiss J. Educ. Res.* **2013**, *35*, 447–471. [\[CrossRef\]](#)
- Sacchi, S.; Hupka-Brunner, S.; Stalder, B.E.; Gangl, M. Die Bedeutung von sozialer Herkunft und Migrationshintergrund für den Übertritt in anerkannte nachobligatorische Ausbildungen in der Schweiz. In *Transitionen im Jugendalter: Ergebnisse der Schweizer Längsschnittstudie TREE*; Scharenberg, K., Hupka-Brunner, S., Meyer, T., Bergman, M.M., Eds.; Seismo: Zurich, Switzerland, 2011; pp. 120–156.
- Zumbühl, M.; Wolter, S.C. *Wie Weiter Nach der Obligatorischen Schule? Bildungsentscheidungen und-Verläufe der PISA-Kohorte 2012 in der Schweiz*; SKBF: Aarau, Switzerland, 2017.
- Baeriswyl, F. Chancengerechtigkeit und Diskriminierung beim Übertritt in die Sekundarstufe I: Schulische Selektionsmodelle Im Vergleich. In *Equity—Diskriminierung und Chancengerechtigkeit im Bildungswesen*; Haenni, A., Ed.; EDK: Bern, Switzerland, 2015; pp. 73–82.
- Combet, B. The institutional dimension of class-based educational decision-making: Evidence from regional variation in Switzerland. *Z. Soziologie* **2019**, *48*, 301–320. [\[CrossRef\]](#)
- Künzle, S. Regelungen und Massnahmen im Übergang von der Primarschule zur Sekundarstufe, I. Interkantonale Dokumentenanalyse am Beispiel der Kantone Zürich, St. Gallen, Schwyz, Luzern, Basel-Stadt, Bern und Thurgau. Ph.D. Dissertation, Universität Zurich, Zurich, Switzerland, 2011.
- Meyer, T. Wer hat, dem wird gegeben: Bildungsungleichheit in der Schweiz. In *Sozialbericht 2008. Die Schweiz Vermessen und Verglichen*; Suter, C., Perrenoud, S., Levy, R., Kuhn, U., Joye, D., Gazareth, P., Eds.; Seismo: Zurich, Switzerland, 2009; pp. 60–81.

10. Sarasin, P. Bildung in der Wissensgesellschaft—oder: Sind tiefe Maturaquoten sinnvoll? In *Abitur und Matura Zwischen Hochschulvorbereitung und Berufsorientierung*; Eberle, F., Schneider-Taylor, B., Bosse, D., Eds.; Springer VS: Wiesbaden, Germany, 2014; pp. 111–141.
11. Burger, K. Human agency in educational trajectories: Evidence from a stratified system. *Eur. Sociol. Rev.* **2021**, *37*, 952–971. [[CrossRef](#)]
12. Scharenberg, K.; Wohlgemuth, K.; Hupka-Brunner, S. Does the structural organisation of lower-secondary education in Switzerland influence pupils' opportunities of transition to upper-secondary education? A multilevel analysis. *Swiss J. Sociol.* **2017**, *43*, 63–87. [[CrossRef](#)]
13. Buchmann, M.; Kriesi, I.; Koomen, M.; Imdorf, C.; Basler, A. Differentiation in secondary education and inequality in educational opportunities: The case of Switzerland. In *Models of Secondary Education and Social Inequality—An International Comparison*; Blossfeld, H.-P., Buchholz, S., Skopek, J., Triventi, M., Eds.; Edward Elgar Publishing: Cheltenham, UK; Northampton, UK, 2016; pp. 111–128.
14. Sixt, M.; Aßmann, C. The influence of regional school infrastructure and labor market conditions on the transition process to secondary schooling in Germany. *J. Educ. Res. Online* **2020**, *12*, 36–66. [[CrossRef](#)]
15. Sixt, M. Wohnort, Region und Bildungserfolg. Die strukturelle Dimension bei der Erklärung von regionaler Bildungsungleichheit. In *Bildungskontexte: Strukturelle Voraussetzungen und Ursachen ungleicher Bildungschancen*; Becker, R., Schulze, A., Eds.; Springer VS: Wiesbaden, Germany, 2013; pp. 457–481.
16. BFS Bundesamt für Statistik. *Der Übergang am Ende der Obligatorischen Schule*; BFS: Neuchâtel, Switzerland, 2016.
17. Glauser, D.; Becker, R. VET or general education? Effects of regional opportunity structures on educational attainment in German-speaking Switzerland. *Empir. Res. Vocat. Educ. Train.* **2016**, *8*, 8. [[CrossRef](#)]
18. Jeworutzki, S.; Schräpler, J.-P. Kleinräumiges regionales Bildungsmonitoring—Analysen mit amtlichen Zensus- und Schuldaten in Nordrhein-Westfalen. In *Bildungsforschung mit Daten der Amtlichen Statistik*; Fickermann, D., Weishaupt, H., Eds.; Waxmann: Münster, Germany; New York, NY, USA, 2019; pp. 156–175.
19. Hupka, S. Ausbildungssituation und Verläufe. In *Die Ersten Zwei Jahre nach Austritt aus der Obligatorischen Schule*; Amos, J., Böni, E., Donati, M., Hupka, S., Meyer, T., Stalder, B.E., Eds.; Bildungsmonitoring Schweiz: Neuchâtel, Switzerland, 2003; pp. 33–58.
20. Sixt, M. Regionale Strukturen als Herkunftsspezifische Determinanten von Bildungsentscheidungen. Ph.D. Dissertation, Universität Kassel, Kassel, Germany, 2010.
21. Kriesi, I.; Leemann, R.J. *Tertiärisierungsdruck: Herausforderungen für das Bildungssystem, den Arbeitsmarkt und das Individuum*; Swiss Academies Communications: Bern, Switzerland, 2020. [[CrossRef](#)]
22. Hega, G.M. Federalism, subsidiarity and education policy in Switzerland. *Reg. Fed. Stud.* **2000**, *10*, 1–35. [[CrossRef](#)]
23. Gonon, P.; Hügli, A.; Künzli, R.; Maag Merki, K.; Rosenmund, M.; Weber, K. *Governance im Spannungsfeld des Schweizerischen Bildungsföderalismus—Sechs Fallstudien*; Hep Verlag: Bern, Switzerland, 2016.
24. Criblez, L. Zur Einleitung: Vom Bildungsföderalismus zum Bildungsraum Schweiz. In *Bildungsraum Schweiz: Historische Entwicklung und Aktuelle Herausforderungen*; Criblez, L., Ed.; Haupt Verlag: Bern, Switzerland, 2008; pp. 9–32.
25. Maag Merki, K. Selektion und Übertritte. In *Governance im Spannungsfeld des Schweizerischen Bildungsföderalismus—Sechs Fallstudien*; Gonon, P., Hügli, A., Künzli, R., Maag Merki, K., Rosenmund, M., Weber, K., Eds.; Hep Verlag: Bern, Switzerland, 2016; pp. 107–126.
26. Neuenschwander, M.P. Selektionsprozesse beim Übergang von der Primarschule in die Berufsbildung. In *Schulübergang und Selektion*; Neuenschwander, M.P., Grunder, H.-U., Eds.; Rügger: Chur, Switzerland, 2010; pp. 15–34.
27. Hafner, S.; Esposito, R.; Leemann, R.J. Transition to long-term baccalaureate school in Switzerland: Governance, Tensions, and Justifications. *Educ. Sci.* **2022**, *12*, 93. [[CrossRef](#)]
28. Glauser, D. *Berufsausbildung oder Allgemeinbildung: Soziale Ungleichheiten beim Übergang in die Sekundarstufe II in der Schweiz*; Springer VS: Wiesbaden, Germany, 2015. [[CrossRef](#)]
29. Hupka-Brunner, S.; Sacchi, S.; Stalder, B.E. Social origin and access to upper secondary education in Switzerland: A comparison of company-based apprenticeship and exclusively schoolbased programmes. *Swiss J. Sociol.* **2010**, *36*, 11–31. [[CrossRef](#)]
30. SCCRE Swiss Coordination Center for Research in Education. *Swiss Education Report*; SCCRE: Aarau, Switzerland, 2018.
31. Scott, W.R. *Institutions and Organizations*; Sage: Thousand Oaks, CA, USA, 2003.
32. Brühwiler, C.; Buecheri, G.; Erzinger, A.B. Bildungswege im Anschluss an die obligatorische Schulzeit. In *PISA 2012: Vertiefende Analysen*; SBFI/EDK und Konsortium PISA.ch: Bern, Switzerland; Neuchâtel, Switzerland, 2014; pp. 59–67.
33. Cattaneo, M.A.; Wolter, S.C. "Against All Odds" Does Awareness of the Risk of Failure Matter for Educational Choices? Working Paper No. 181; Institut für Betriebswirtschaftslehre: Bern, Switzerland, 2021.
34. Cattaneo, M.A.; Wolter, S.C. *Die Berufsbildung in der Pole-Position. Die Einstellungen der Schweizer Bevölkerung zum Thema Allgemeinbildung vs. Berufsbildung*; SKBF: Aarau, Switzerland, 2016.
35. Geser, H. *Sprachräume als Arbeits- und Organisationskulturen: Vergleichende Empirische Befunde in der Deutschen und Französischen Schweiz*; Universität Zurich: Zurich, Switzerland, 2003; Available online: <https://socio.ch/work/geser/08.pdf> (accessed on 10 March 2022).
36. Hägi, L. Disparate Entwicklungen der schweizerischen Berufsmaturität—Zur Wertigkeit eines beruflichen Bildungsabschlusses in verschiedenen Kantonen. In *Bildung und Konventionen. Die "Economie des Conventions" in der Bildungsforschung*; Imdorf, C., Leemann, R.J., Gonon, P., Eds.; Springer VS: Wiesbaden, Germany, 2019; pp. 341–369.

37. Leemann, R.J.; Hafner, S. Optimierung in der Organisation von Bildung als Aushandlungsprozess zwischen nationaler Harmonisierung und regionaler Diversität. Einblicke in die Governance der Institutionalisierung der Schweizer Fachmittelschule aus der Perspektive der Soziologie der Konventionen. In *Steuerung von Bildungseinrichtungen, Theorie und Empirie Lebenslangen Lernens*; Alke, M., Feld, T.C., Eds.; Springer Nature: Wiesbaden, Germany, 2022; in press.
38. Gonon, P.; Bonoli, L. *Bildung: Etwa doch ein Polenta- und Röstigraben? Berufsbildung im Spannungsfeld zwischen Bund und Kantonen*; Schweizerische Gesellschaft für angewandte Berufsbildungsforschung SGAB: Bern, Switzerland, 2022; Volume 1, pp. 1–7.
39. Aepli, M.; Kuhn, A.; Schweri, J. Culture, norms, and the provision of training by employers: Evidence from the Swiss language border. *Labour Econ.* **2021**, *73*, 102057. [[CrossRef](#)]
40. SCCRE Swiss Coordination Center for Research in Education. *Swiss Education Report*; SCCRE: Aarau, Switzerland, 2014.
41. Felouzis, G.; Charmillot, S. Schulische Ungleichheit in der Schweiz. *Soc. Chang. Switz.* **2017**, *8*, 1–14. [[CrossRef](#)]
42. Mühlemann, S.; Wolter, S.C. Regional effects on employer provided training: Evidence from apprenticeship training in Switzerland. *J. Labour Mark. Res.* **2007**, *40*, 135–147. [[CrossRef](#)]
43. Maurer, M. Berufsbildung und Arbeitsmarkt zwischen Tertiärisierung und Fachkräftemangel. Herausforderungen für das duale Modell. In *Herausforderungen für die Berufsbildung in der Schweiz: Bestandesaufnahme und Perspektiven*; Maurer, M., Gonon, P., Eds.; Hep Verlag: Bern, Switzerland, 2013; pp. 15–36.
44. Schellenbauer, P.; Walser, R.; Lepori, D.; Hotz-Hart, B.; Gonon, P. *Die Zukunft der Lehre: Die Berufsbildung in einer Neuen Wirklichkeit*; Avenir Suisse: Zurich, Switzerland, 2010.
45. Geser, H. *Determinanten des Lehrstellenangebots in Schweizer Industrie- und Dienstleistungsbetrieben. Aktuelle empirische Befunde*; Universität Zurich: Zurich, Switzerland, 1999; Available online: <https://socio.ch/work/geser/03.pdf> (accessed on 10 March 2022).
46. Sheldon, G. *Die Rolle der Berufsbildung in der Bekämpfung des Fachkräftemangels. Die Volkswirtschaft*; Universität Basel: Basel, Switzerland, 2009; Volume 1/2, pp. 51–53.
47. Angelone, D.; Keller, F.; Moser, U. *Entwicklung Schulischer Leistungen Während der Obligatorischen Schulzeit. Bericht zur Vierten Zürcher Lernstandserhebung Zuhanden der Bildungsdirektion des Kantons Zürich*; Bildungsdirektion Kanton Zürich: Zurich, Switzerland, 2013. [[CrossRef](#)]
48. Becker, R.; Schoch, J. *Soziale Selektivität. Empfehlungen des Schweizerischen Wissenschaftsrates SWR*; Schweizerischer Wissenschaftsrat SWR: Bern, Switzerland, 2018.
49. Bourdieu, P.; Passeron, J.-C. *Reproduction in Education, Society and Culture*; Sage: London, UK, 1977.
50. Bourdieu, P.; Wacquant, L.J.D. *An Invitation to Reflexive Sociology*; University of Chicago Press: Chicago, IL, USA, 1992.
51. Nash, R. Bourdieu on education and social and cultural reproduction. *Br. J. Sociol. Educ.* **1990**, *11*, 431–447. [[CrossRef](#)]
52. Hasse, R.; Schmidt, L. *Inequality Decisions and Accounts: The Case of Tracking in a Swiss Elementary School*; Working Paper No. 05; Universität Luzern: Lucerne, Switzerland, 2010.
53. Hofstetter, D. *Die Schulische Selektion als Soziale Praxis*; Aushandlungen von Bildungsentscheidungen beim Übergang von der Primarstufe in die Sekundarstufe, I; Beltz Juventa: Weinheim, Germany, 2018.
54. Boudin, R. *Education, Opportunity, and Social Inequality: Changing Prospects in Western Societies*; Wiley: New York, NY, USA, 1974.
55. Breen, R.; Goldthorpe, J.H. Explaining educational differentials. Towards a formal rational action theory. *Ration. Soc.* **1997**, *9*, 275–305. [[CrossRef](#)]
56. Stocké, V. The rational choice paradigm in the sociology of education. In *Research Handbook on the Sociology of Education*; Becker, R., Ed.; Edward Elgar Publishing: Cheltenham, UK, 2019; pp. 57–68.
57. Rubie-Davies, C.M.; Peterson, E.R.; Sibley, C.G.; Rosenthal, R. A teacher expectation intervention: Modelling the practices of high expectation teachers. *Contemp. Educ. Psychol.* **2015**, *40*, 72–85. [[CrossRef](#)]
58. Neuenschwander, M.P.; Niederbacher, E. Schulniveau- und Leistungserwartungen von Lehrpersonen und Leistungsentwicklung beim Übergang in die Sekundarstufe I. In *Bildungsverläufe von der Einschulung bis in den Ersten Arbeitsmarkt*; Neuenschwander, M.P., Nägele, C., Eds.; Springer VS: Wiesbaden, Germany, 2013; pp. 123–143. [[CrossRef](#)]
59. Bayard, S.; Imlig, F. Socio-spatial conditions of educational participation: A typology of municipalities in the Canton of Zurich. *Educ. Sci.* **2022**, *12*, 73. [[CrossRef](#)]
60. Meyer, T. Von der Schule ins Erwachsenenleben. *Ausbildungs- und Erwerbsverläufe in der Schweiz. Soc. Chang. Switz.* **2018**, *13*, 1–14. [[CrossRef](#)]
61. Cattaneo, M.A.; Wolter, S.C. *Nationale Eigenheiten von Bildungssystemen in Zeiten der Globalisierung*; SKBF: Aarau, Switzerland, 2013.
62. Tjaden, J.D.; Scharenberg, K. Ethnic choice effects at the transition into upper-secondary education. *Acta Sociol.* **2017**, *60*, 309–324. [[CrossRef](#)]
63. Abrassart, A.; Busemeyer, M.R.; Cattaneo, M.A.; Wolter, S.C. Do adult foreign residents prefer academic to vocational education? Evidence from a survey of public opinion in Switzerland. *J. Ethn. Migr. Stud.* **2020**, *46*, 3314–3334. [[CrossRef](#)]
64. Beck, M. *Bildungserfolg von Migranten—Der Beitrag von Rational-Choice-Theorien bei der Erklärung von Migrationsbedingten Bildungsungleichheiten in Bern und Zürich*; Haupt: Bern, Switzerland, 2015. [[CrossRef](#)]
65. Holzer, T.; Zahner Rossier, C. Lesen, Naturwissenschaften und Problemlösen. In *PISA 2003: Kompetenzen für die Zukunft. Zweiter nationaler Bericht*; Zahner Rossier, C., Ed.; BFS/EDK: Neuchâtel/Bern, Switzerland, 2005; pp. 35–55.

- 
66. Buchholz, S.; Pratter, M. Wer profitiert von alternativen Bildungswegen? Alles eine Frage des Blickwinkels! *KZfSS* **2017**, *69*, 409–435. [[CrossRef](#)]
  67. Raftery, A.E.; Hout, M. Maximally maintained inequality: Expansion, reform, and opportunity in Irish education, 1921–1975. *Sociol. Educ.* **1993**, *66*, 41–62. [[CrossRef](#)]
  68. Meyer, T. Jugendliche mit Migrationshintergrund. In *Die Ersten zwei Jahre nach Austritt aus der Obligatorischen Schule*; Amos, J., Böni, E., Donati, M., Hupka, S., Meyer, T., Stalder, B.E., Eds.; BFS: Neuchâtel, Switzerland, 2003; pp. 111–118.