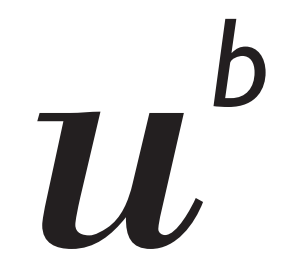# VET or general education?

Effects of regional opportunity structures on educational attainment in German-speaking Switzerland

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Research questions

- Do regional opportunity structures affect educational attainment at the transition to upper secondary education net of institutional and individual effects?
- How do opportunity structures influence pupils' educational attainment?

Micro-macro model to explain the social structure of upper secondary education

Impact of the institutional setting
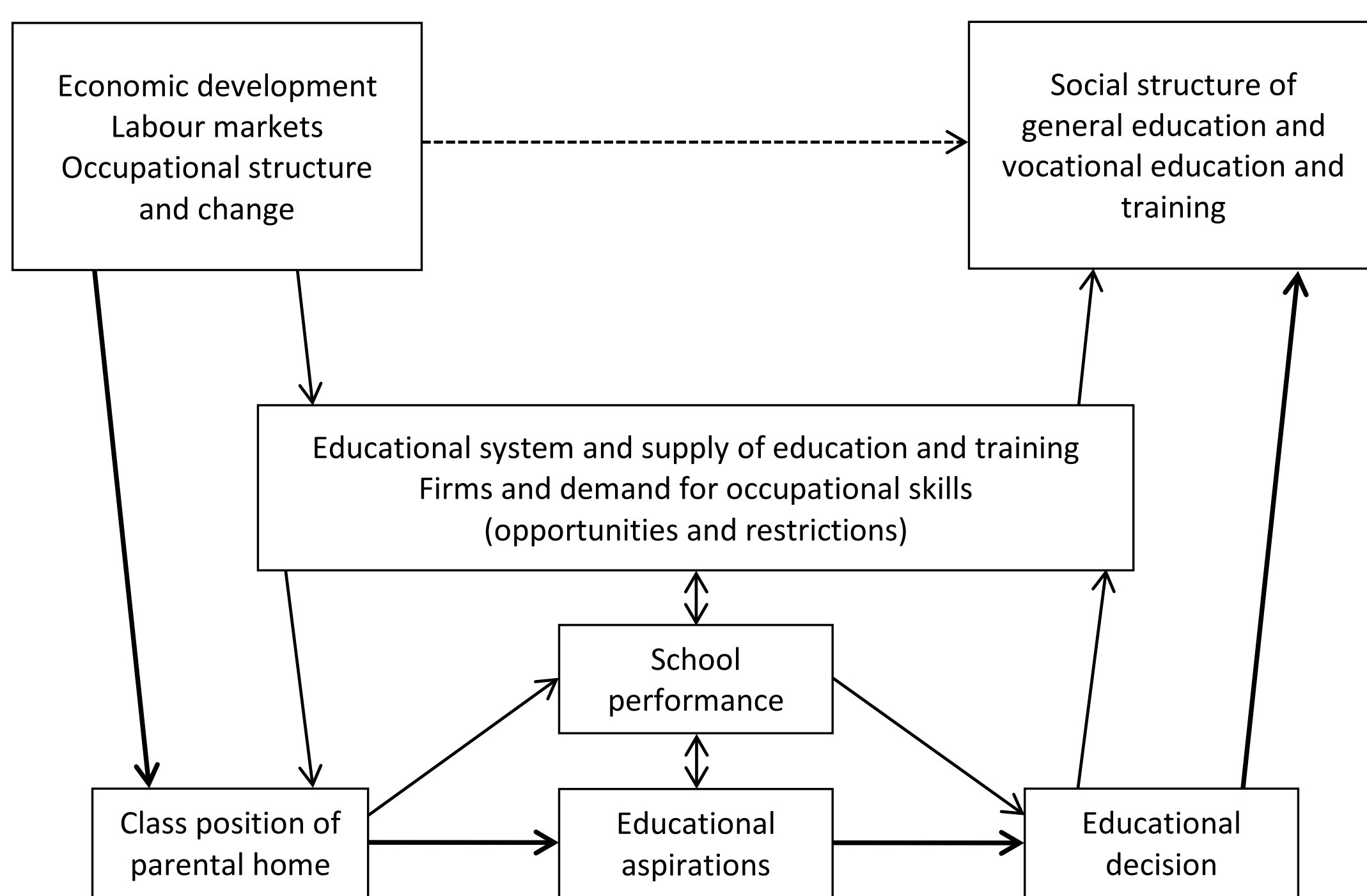
Impact of the institutional setting: Educational pathways and trajectories at upper secondary and subsequent levels are highly standardized and institutionalized. Educational opportunities heavily depend on the attended school type at lower secondary level and school performance. While admission criteria and/or entrance examinations of school-based apprenticeships, FVB, or general education programs are regulated at cantonal level, the access to dual apprenticeships is a special case of the "matching-problem" between employers and employees (Müller, Gangl, and Scherer, 2002).

Individual resources and restrictions: In countries with a high degree of stratification and vocational specificity, a close relationship is observed between social origin and educational attainment, while intergenerational educational mobility is comparatively low. Children from socially underprivileged families are less likely to succeed in directly securing a certifying upper secondary training place, and they are under-represented at baccalaureate schools and the FVB. Social inequality of educational opportunity (IEO) can be explained in part by primary effects of stratification, i.e. the correlation of social origin and school performance, and secondary effects of stratification, i.e. the rationale behind educational decision-making, which varies between actors from different social strata (Boudon, 1974).

Regional opportunity structures: Regional opportunity structures differ with respect to the diversity and extent of the supply of educational alternatives. On the other hand, due to the strongly developed VET system and the strong ties between the education system and labor market, the feasible set of educational alternatives depends on the condition as well as the structure of the regional labor market (occupational structure, relative importance of labor market sectors, dynamics of the labor market, etc.).

Hypotheses

- Variation in the opportunity structures across regions should (partly) explain the variation observed in pupils' educational aspirations as well as the upper secondary track they attend.
- The more extensive regional opportunity structures are, the higher the probability that pupils opt for general education programs.

Data

- **Micro-level Data**: DAB panelstudy; 2.192 students who participated in wave 4 and for whom information on educational attainment at upper secondary level was available. Data was multiply imputed using chained equations (Allison, 2001; White, Royston, and Wood, 2011).
- **Regional-level Data**: Data from the Swiss Federal Statistical Office (FSO) at MS-regional level (spatial mobility regions; MS = mobilit spatiale, $N = 56$).

Statistical procedure

- Principal-component factor analysis (PCF, see Harman, 1976, 136ff.) to construct one z-standardized scaling variable for controlling regional opportunity structures: (change) in youth ratio; unemployment rate; proportion of persons entitled to enroll at universities; proportion of apprentices among employees; total / proportion of workplaces in the 2nd and 3rd sector; proportion of new jobs that have been created within new firms. Cronbach's α: 0.939.
- Multinomial logistic regression models to analyze the educational situation immediately after leaving compulsory schooling as well as 15 months afterwards; Average marginal effects (AMEs) are used to compare nested models and to minimize bias related to unobserved heterogeneity (Mood, 2010).

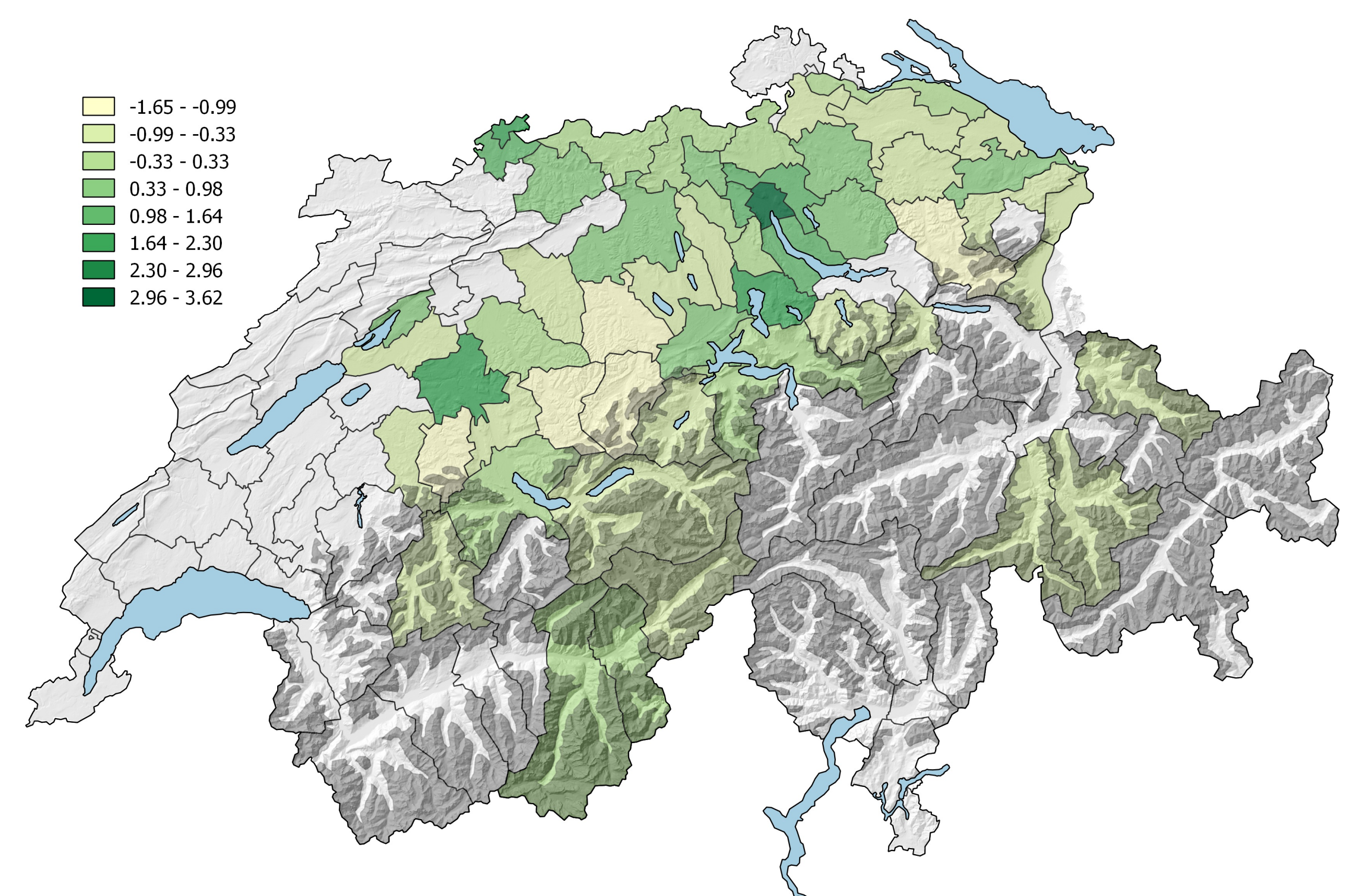## Variation of regional opportunity structures

Results

Table 2 Educational situation directly after leaving compulsory education [multinomial logistic regression, average marginal effects (AMEs)] (Source: DAB, own calculations; estimates based on 50 imputed data sets)

	Model 1						Model 2					
	VET EFZ/FVB		Baccal. and special. schools		Bridge year courses		VET EFZ/FVB		Baccal. and special. schools		Bridge year courses	
Regional opportunity structure	−0.0430***	(0.0098)	0.0248***	(0.0072)	0.0181*	(0.0075)	−0.0305***	(0.0091)	0.0146*	(0.0063)	0.0159*	(0.0075)
Gender (Ref: male)	−0.1889***	(0.0204)	0.0595***	(0.0153)	0.1284***	(0.0159)	−0.1409***	(0.0189)	0.0171	(0.0132)	0.1238***	(0.0157)
GPA German (z-standard.)	−0.0452***	(0.0121)	0.0712***	(0.0103)	−0.0260**	(0.0092)	−0.0218	(0.0111)	0.0419***	(0.0089)	−0.0201*	(0.0091)
GPA mathematics (z-standard.)	0.0189	(0.0119)	0.0324***	(0.0097)	−0.0513***	(0.0089)	0.0347**	(0.0106)	0.0125	(0.0081)	−0.0473***	(0.0088)
School type 8th grade[a]												
Advanced requirements	−0.0459*	(0.0204)	0.1809***	(0.0126)	−0.1349***	(0.0178)	−0.0235	(0.0213)	0.1402***	(0.0157)	−0.1167***	(0.0185)
Pre-gymnasium	−0.4812***	(0.0244)	0.6496***	(0.0235)	−0.1685***	(0.0115)	−0.3481***	(0.0401)	0.5040***	(0.0407)	−0.1559***	(0.0145)
Social background[b,c]												
EGP-classes II	0.0424	(0.0334)	−0.0107	(0.0238)	−0.0318	(0.0274)	0.0358	(0.0307)	0.0020	(0.0197)	−0.0378	(0.0270)
EGP-classes IIIa/b, IVa/b/c	0.0584	(0.0308)	−0.0191	(0.0224)	−0.0394	(0.0253)	0.0381	(0.0288)	0.0042	(0.0196)	−0.0423	(0.0253)
EGP-classes V, VI, VIIa/b	0.1176***	(0.0335)	−0.0671**	(0.0249)	−0.0505	(0.0266)	0.0921**	(0.0313)	−0.0460*	(0.0217)	−0.0461	(0.0267)
Tertiary degree (ISCED 5/6)	−0.0698*	(0.0274)	0.1065***	(0.0205)	−0.0367	(0.0216)	0.0002	(0.0254)	0.0421*	(0.0176)	−0.0423*	(0.0210)
Realistic educational aspiration (mid 8th grade)[d]												
Baccalaureate/special. schools							−0.4019***	(0.0289)	0.3674***	(0.0242)	0.0345	(0.0239)
Other							−0.1927***	(0.0281)	0.0478*	(0.0223)	0.1449***	(0.0234)
Observations/pseudo-R^2	2192/0.230						2192/0.341					

Table 3 Educational situation 15 months after leaving compulsory education [multinomial logistic regression, average marginal effects (AMEs)] (Source: DAB, own calculations; estimates based on 50 imputed data sets)

	Model 1						Model 2					
	VET EFZ/FVB		Baccal. and special. schools		Bridge year courses		VET EFZ/FVB		Baccal. and special. schools		Bridge year courses	
Regional opportunity structure	−0.0330***	(0.0082)	0.0249***	(0.0073)	0.0081	(0.0042)	−0.0221**	(0.0074)	0.0145*	(0.0064)	0.0075	(0.0042)
Gender (Ref: male)	−0.0907***	(0.0173)	0.0636***	(0.0155)	0.0271**	(0.0089)	−0.0476**	(0.0156)	0.0220	(0.0135)	0.0256**	(0.0088)
GPA German (z-standard.)	−0.0622***	(0.0112)	0.0671***	(0.0106)	−0.0048	(0.0053)	−0.0358***	(0.0099)	0.0393***	(0.0092)	−0.0035	(0.0052)
GPA mathematics (z-standard.)	−0.0128	(0.0110)	0.0334***	(0.0100)	−0.0206***	(0.0056)	0.0049	(0.0096)	0.0145	(0.0084)	−0.0194***	(0.0055)
School type 8th grade[a]												
Advanced requirements	−0.1517***	(0.0157)	0.1895***	(0.0126)	−0.0378***	(0.0102)	−0.1201***	(0.0176)	0.1536***	(0.0154)	−0.0335**	(0.0103)
Pre-gymnasium	−0.6071***	(0.0226)	0.6462***	(0.0223)	−0.0391***	(0.0070)	−0.4816***	(0.0378)	0.5163***	(0.0381)	−0.0347***	(0.0083)
Social background[b,c]												
EGP-classes II	0.0259	(0.0277)	−0.0327	(0.0240)	0.0068	(0.0155)	0.0149	(0.0245)	−0.0209	(0.0203)	0.0060	(0.0153)
EGP-classes IIIa/b, IVa/b/c	0.0295	(0.0260)	−0.0376	(0.0227)	0.0080	(0.0139)	0.0084	(0.0236)	−0.0155	(0.0201)	0.0071	(0.0139)
EGP-classes V, VI, VIIa/b	0.0611*	(0.0287)	−0.0573*	(0.0259)	−0.0037	(0.0141)	0.0388	(0.0261)	−0.0368	(0.0229)	−0.0020	(0.0143)
Tertiary degree (ISCED 5/6)	−0.1017***	(0.0241)	0.1033***	(0.0205)	−0.0016	(0.0144)	−0.0368	(0.0218)	0.0407*	(0.0173)	−0.0039	(0.0143)
Realistic educational aspiration (mid 8th grade)[d]												
Baccalaureate/special. schools							−0.3711***	(0.0262)	0.3580***	(0.0239)	0.0131	(0.0141)
Other							−0.1028***	(0.0251)	0.0636**	(0.0229)	0.0392**	(0.0127)
Observations/pseudo-R^2	2192/0.247						2192/0.369					

Conclusion

- Regional opportunity structures have a direct effect on the upper secondary track attended.
- In addition to the effects of the school type attended at lower secondary level and individual constraints, we find that the more extensive the regional opportunity structures are, the higher the probability of pupils attending general education programs.
- In contrast, restricted opportunity structures increase pupils' probability of attending VET programs.
- Moreover, the regional opportunity structures are positively correlated with pupils probability of commencing bridge year courses directly after leaving compulsory schooling.
- Regional opportunity structures have an effect on pupils' realistic educational aspirations (results not shown on poster). Once we control for educational aspirations (models 2), part of the direct effects of the opportunity structures on educational attainment after compulsory schooling can be explained.
- Since the effects of the regional opportunity structures remain significant this implies that the real regional supply of educational opportunities structures the transitions to VET. While the aspirations are significant push factors, the regional supply of vocational and general educational alternatives could be isolated as pull factors for school leavers.

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