Inequalities in the haven of equality? Upper secondary education and entry into tertiary education in Finland

Elina Kilpi-Jakonen, Jani Erola & Aleksi Karhula

INTRODUCTION

Since the first PISA evaluation in 2000, Finland has been identified as one of the world's leaders in ensuring equality of educational outcomes at the age of 15 (e.g. OECD 2004). In addition, international comparisons of intergenerational transmission of education for older cohorts (born before 1980s) have also found Finland to be relatively open in this respect (Hertz et al. 2007; Pfeffer 2008). For cohorts born in the 1980s, including those in the PISA evaluations, the openness of educational pathways at both upper secondary and tertiary levels, as well as the continued educational expansion that has taken place in tertiary education through the establishment of polytechnics, should further enhance equality of educational opportunity.

However, little attention has been paid to how social origin differences develop along the educational pathway. Therefore, the aim of this chapter is to explore the importance of social origin for two major educational transitions: gaining an upper secondary qualification and entrance into tertiary education. In addition to analysing who makes these transitions, we also look at differentiation within these levels, as the Finnish education system has two tiers at both levels: general and vocational schools at the upper secondary level and universities and polytechnics at the tertiary level.

EDUCATION IN FINLAND

The Finnish education system has seen major reforms in the past decades. During the 1970s, Finland moved from a rather stratified system of education, where the first allocation of students to different types of school took place at approximately age 11 (after 4 years of school), to a comprehensive school system, where this was postponed until age 16 (after 9 years of school). As in other Nordic countries, the comprehensive school reform has been shown to have increased intergenerational equality (Pekkarinen, Uusitalo and Kerr 2009; Kerr, Pekkarinen and Uusitalo 2013).

Ability grouping was used in comprehensive schools until the mid-1980s after which it was abolished. Currently there is no tracking in comprehensive schools, though there exists both within-

and between-school differentiation in terms of specialization, in particular related to music and foreign languages.

After compulsory education, students apply to upper secondary schools, which are divided into general and vocational ones. Entry into these schools is mostly based on the average teacher-given grades in comprehensive school, though some courses and schools also use aptitude tests. Approximately 95 per cent of each cohort continues to upper secondary education immediately after finishing comprehensive school and 86 per cent finish an upper secondary qualification within eight years of leaving comprehensive school (own calculations based on register data from Statistics Finland, see data and methods section for details).

General upper secondary typically lasts three years and ends with national matriculation examinations. Except for examinations in mathematics and foreign languages, there is only one level of examinations, and students can choose relatively freely in which subjects and at what level they take their matriculation examinations. There is no official ranking of schools, though newspapers publish the results of the matriculation examinations by school as well as lists of the lowest average grade with which students were admitted to the school each year. These lists give students and their parents an idea about the reputation of different schools even though they do not directly indicate the quality of the schools.

Vocational education was reformed a great deal during the 1980s and 1990s: at the upper secondary level vocational qualifications became three-year qualifications that give students the eligibility to apply to tertiary education, and at the tertiary-level vocational institutions were upgraded to polytechnics (or universities of applied sciences), which now grant Bachelor degrees and more recently also higher polytechnic degrees, which are close to universities' Master's degrees. The three-year upper secondary vocational qualifications are relatively vocationally specific but mostly school based. The syllabus includes both general and vocational courses, as well as on-the-job training periods. Other types of vocational qualifications also exist but it is mainly adults rather than young people directly out of comprehensive school who complete these.

Previous research on social inequalities in access to upper secondary qualification has shown that parental resources in the form of labor force participation and education predict whether young people are studying in upper secondary education one year after compulsory education, even after controlling for prior educational performance (Kilpi-Jakonen 2011). Moreover, parental social assistance receipt is a major predictor of whether a young person has obtained an upper secondary qualification by the age of 22 (Kallio, Kauppinen and Erola 2014). With regard to general and vocational schools, parental education is a major predictor of which type of school a young person is attending one year after comprehensive school, together with parental social class and income – also when controlling for prior educational performance (Kilpi-Jakonen 2011).

The university sector has also expanded and many new universities were established in the 1960s. The proportion of young people who had entered universities by the age of 24 rose from 8 per

cent in the birth cohort of 1946 to 12 per cent in that of 1966 and further to 17 per cent in that of 1976 (Kivinen, Hedman and Kaipainen 2007). The expansion also equalized access chances between children from academic and non-academic families, although the odds of the former of accessing universities were still 8.2 times higher than those of the latter (ibid.). Among the young people studied in this chapter, most of whom were born in 1984–88, approximately 21 per cent had accessed universities eight years after leaving comprehensive school (approximately age 24) and a further 28 per cent had accessed polytechnics. Therefore, most of the expansion of the higher education sector in the late 1990s and 2000s has happened through the establishment of polytechnics rather than as further growth in universities. Access to universities and to most degree courses in polytechnics is through entrance examinations, although results from upper secondary school may also play a part. Many students do not gain direct entry into tertiary education after finishing upper secondary but have to take one or more gap years before continuation due to the highly competitive nature of tertiary education entrance: annually only approximately 30 per cent of those who apply to polytechnics or universities are admitted, and the entry chances of just-graduated general upper secondary graduates are at about the same level (FNBE 2009; 2010).

RESEARCH OBJECTIVES AND EXPECTATIONS

In addition to the studies cited above, there is relatively little prior quantitative research concerning issues of inequality of opportunity in Finnish education. Moreover, most of the research that exists does not take into account prior educational performance, neither in terms of grades or test performance nor prior educational pathways. Therefore, we focus on questions of allocation into different types of upper secondary education and tertiary education and examine the extent to which social background effects are mediated by performance and, in the case of entry into tertiary education, by achieved upper secondary qualifications.

According to rational choice theories, children from less advantaged backgrounds may not judge it worth the risk to continue in more demanding educational trajectories as their priority will be to maintain their parents' status and avoid downward mobility (Breen and Goldthorpe 1997). In a country such as Finland there are several reasons to expect relatively small social origin differences, including the openness of the educational system and the high level of equality that has been found at lower levels of education (OECD 2004; Kilpi-Jakonen 2012). However, neither of these automatically translates into greater equality at later transitions and to some extent the equality at lower levels may also be an incentive for greater inequalities at later stages if it is only at these later stages where parental influence can really make a difference (cf. Raftery and Hout 1993).

Enhancing the status of vocationally-oriented pathways may make them more attractive particularly for students from lower social origins, thus diverting them from the more prestigious academically-oriented pathways (cf. Hillmert & Jacob 2003). Moreover, as credentials are extremely

important for labor market success in Finland and their role as mediators of socioeconomic inheritance has increased (Erola 2009), it may be all the more important for advantaged families to secure higher educational attainment for their children in order to ensure the intergenerational transmission of socioeconomic status.

The type of secondary education attended is likely to be important for entry into tertiary education because the amount of academic preparation that is given differs so much between the two types even if both types give eligibility for tertiary studies. It should also be noted that students' wishes for further education are likely to differ even when they enter upper secondary education. However, the extent to which the type of upper secondary qualification mediates social origin differences is likely to depend on the strength of the social origin differences in upper secondary qualifications and whether young people make their upper secondary decisions with their final educational attainment already in mind. As social origin differences in performance tend to be comparatively small, this also limits the amount that they can mediate the observed social origin differences at later transitions, despite the fact that prior performance is likely to play a large role at each transition.

In addition to the regular educational transitions, we examine social origin inequalities related to entry into university in more detail by comparing direct entrance to universities with entrance to university after first having begun studying at a polytechnic. This question is of direct political relevance due to the fact that current policy makers are aiming to make this route more difficult by introducing quotas for first-time entrants into tertiary education in order to accelerate labor market entry by speeding up entry into and graduation from tertiary education. With regard to social origin inequalities, there are two competing scenarios of who follows this route. On the one hand, it may be that this route is mainly used by young people from well-off families as a 'gap year' opportunity when they have failed to gain entry into the university course of their choice. In this case, deterring young people from taking these places and/or committing them to finishing the degree program may be beneficial from the societal point of view. On the other hand, it may be that this route is mainly used by young people coming from lower social origins, who find polytechnics a less risky choice compared to universities. Having entered tertiary education, however, they may perceive the threshold to university studies as lower, for example if the studies are easier than expected, and then want to make the transition within tertiary education. In this case, the partial closing of this route would likely be detrimental to inequality of opportunity.

DATA AND METHODS

We use register data obtained from Statistics Finland. The dataset is a 5% random sample of young people who finished comprehensive school during the years 2000–04. Interestingly, these cohorts include the two that were included in the first two PISA tests.[1] These young people are all followed

until 2012 and we analyze the first eight years for all individuals, i.e. data until 2008–12. The data include yearly information about registration in the different types of educational institutions and about qualifications gained.

The young people in the data are linked to their parents for whom we measure the highest attained education level at the time their child finishes compulsory education. We use the maximum parental education and the following categories: university degree, lowest level tertiary qualification or general upper secondary qualification, vocational secondary qualification, and less. The last category also includes a small proportion of parents with an unknown level of education.

Our measure of prior school performance is the average of teacher-given grades at the end of comprehensive school. This is also the measure that upper secondary entry is largely based upon. However, entry into tertiary education is no longer based on this measure and in these models the average grade should be seen as more of a proxy for general school performance. Because this information is based on the register for upper secondary applications, there is a small proportion of young people for whom this information is missing. Their missing information has been replaced with the average grade of others with the same upper secondary continuation pathway (number of years taken to enter and type entered) and a dummy variable for missing information introduced into the models.

As demographic variables we include gender and registered language. The latter is categorised as Finnish, Swedish and other. Swedish is the second official language in Finland and there are separate schools in Finnish and Swedish up to the university level.

We have a series of dependent variables: 1) whether or not a secondary qualification has been gained during the eight years of follow-up; 2) whether the secondary qualification gained is from a general or vocational school, if both then classified as general; 3) whether the young person has entered tertiary education, conditional on having an upper secondary qualification; 4) whether this entry is into universities or polytechnics, if both then classified as university; and 5) whether entry into university has been direct or preceded by entry into a polytechnic. Our samples become smaller across the dependent variables as we exclude people who have not gained certain qualifications and/or made certain transitions: we begin with 15,434 individuals for the first dependent variable and end with 3,207 for the fifth.

All models have been run as logistic regression models given that all dependent variables are binary. The results tables present the coefficients as odds ratios and the text illustrates selected results as percentage point differences based on the average marginal effects.

RESULTS

Descriptive results

Most young people (86 per cent) attain an upper secondary qualification in the eight years after leaving comprehensive school, although there is a social origin gradient (Table 1). The majority (61 per cent) of those who attain this qualification get it from general schools and there is up to a 50 percentage point difference depending on parental education in the proportion attaining a general versus vocational qualification. Most of the dropout from upper secondary schools happens from vocational schools and is also socially stratified (not shown).

TABLE 1 HERE

Slightly over half (56 per cent) of the young people with an upper secondary qualification enter tertiary education within the observation period and they are relatively evenly distributed into polytechnics (57 per cent) and universities (43 per cent). Although entry into tertiary education is highly socially stratified, the differences become more attenuated when the attained upper secondary qualification is taken into account. Most young people who obtain a vocational qualification do not enter tertiary education at all (83 per cent) and if they do it is into a polytechnic (16 per cent). On the other hand, most young people with a general qualification enter tertiary education (81 per cent) and they are relatively evenly distributed into polytechnics (42 per cent) and universities (39 per cent).

Nevertheless, even when among young people with a general qualification a strong social origin gradient in access to university remains: the difference by parental education is up to 35 percentage points. Moreover, young people from advantaged backgrounds are more likely to enter university directly rather than via polytechnics. Among young people who had entered university in the observation period, 13 per cent had previously been enrolled at a polytechnic.

Overall, only a limited number of routes are taken through the education system, at least in the first eight years after comprehensive school, despite its openness. Polytechnics have opened up an entrance into tertiary education for a limited number of young people graduating from vocational schools – though it should also be remembered that vocational institutes did this to some extent previously, only at a somewhat lower level. Polytechnics also seem to be a stepping stone (or a detour) for some young people on their way to university, particularly if they come from a lower social origin.

Multivariate results

Results relating to gaining an upper secondary qualification controlling for gender and registered language confirm the strong social origin gradient from the descriptive pattern (Model 1a, Table 2). Adding school results from comprehensive school (Model 1b) reduces these differences substantially: the maximum difference in parental education reduces from 23 to 7 percentage points. The gender difference, which is initially in favor of women, turns to be somewhat in favor of men when school performance is controlled for.

TABLE 2 HERE

Moving on to obtaining a general versus vocational qualification, the descriptive pattern is again confirmed after controls for the demographic variables (Model 2a). The differences are also dramatically reduced when school performance is taken into account (Model 2b): the maximum difference is reduced from 52 to 19 percentage points, and there is no difference between the lowest two parental education levels. Again, the gender difference turns from being in favor of women to favoring men.

The third set of models analyses entrance into tertiary education among upper secondary graduates and again shows the strong social origin gradients (Model 3a, Table 3). The next model controls for the type of upper secondary qualification, showing a substantial advantage for young people with a general qualification compared to those with only a vocational qualification (Model 3b). This also reduces the social origin effect from a maximum difference of 49 to 19 percentage points. The third model takes into account school performance (Model 3c) and shows a further weakening of social origin effects: the previously mentioned difference is reduced to 12 percentage points. The female advantage in entry into tertiary education that is evident in the first model becomes insignificant when qualifications are taken into account and turns into a disadvantage after controlling for school grades.

TABLE 3 HERE

The next set of models focuses on those who have entered tertiary education and compares entrance into universities with entrance into polytechnics. A strong social gradient is again present (Model 4a) and is reduced clearly but not as strongly as for the previous outcomes by controlling for prior qualification type (Model 4b) and prior school performance (Model 4c). Across the three models, the maximum social origin difference changes from 36 to 27 percentage points and further to 19 percentage points. There is practically no difference between the lowest two parental education levels in any of the models. The gender difference is also insignificant in the first two models but a female disadvantage is apparent in the third model.

The final models include only university entrants in order to analyze the differences between those who enter university directly versus those who enter via polytechnics. The first model confirms the descriptive pattern that direct entrants to university are more socially selected than those who enter via polytechnics (Model 5a) and the differences are relatively unchanged when prior qualification is introduced into the model (Model 5b). However, in the last model where school grades are introduced (Model 5c) there are no significant social origin differences. Therefore, the main reason why young people from higher social origins enter universities directly rather than via polytechnics to a greater extent than their peers from more disadvantaged backgrounds is that their prior school performance tends to be better.

With regard to the ethnic differences, measured here based on registered language and controlling for parental education, there tends to be an advantage for the Swedish speakers at all transitions, in particular in entering university. This is not surprising since there are proportionately

more places at Swedish-speaking universities than Finnish-speaking ones; the two Swedish universities have the highest admittance rates (FNBE 2009). For the other-language speakers, many of whom are children of immigrants, the pattern is more divergent: there is a disadvantage in graduating from upper secondary and in entering tertiary education (though the latter explained by school grades) and no difference in the type of qualification gained (though turning into a greater likelihood of gaining a general qualification once grades are controlled) and entry into university. Moreover, other-language speakers are more likely than Finnish speakers to enter university directly.

DISCUSSION AND CONCLUSION

The analyses of this chapter have been set against the backdrop of previous international (and national) work highlighting the relatively high levels of equality in the Finnish education system as well as the institutional features promoting (further) equality: comprehensive schooling and openness of upper secondary and tertiary education. Our key findings are that educational inequalities grow along the educational pathway as there are both direct and indirect effects of social origin present at each transition and that educational pathways in the first eight years after leaving compulsory education mostly follow well-established routes. However, we have identified one partial exception: the possibility to move from polytechnics to universities increases equality of opportunity as this route is more likely for university entrants from lower rather than higher social origins.

Decisions made at entrance to upper secondary education – or during upper secondary education for the rather few people who change school type – play a major role in determining the chances of entry into higher education as well as they type of education entered. In other words, tracking at this level is important for future transition chances. In addition, school performance, measured here with average grades at the end of comprehensive school, also plays an important role in all later educational decisions and explains some of the social origin differences in transition propensities. This is despite the fact that social origin explains comparatively little of achievement differences at this age in Finland (OECD 2004; Kilpi-Jakonen 2012). However, the remaining social origin differentials at each transition after controlling for these two measures of prior educational achievement indicate that the relative equality at the end of compulsory education is not sustained across the later educational pathway. What we see overall are cumulative social origin effects at each transition.

Looking at the unconditional social origin differences as odds ratios across the whole range of outcomes, the most unequal outcomes tend to be the earlier ones, in particular graduating at all from upper secondary schools. This pattern is relatively unsurprising since the way we model later transitions does not correct for the selectivity at the earlier transitions. Graduation from upper secondary is also the outcome where the direct effect of social origin remains the largest after controlling for prior educational achievement. Based on percentage point differences, the largest

unconditional social origin difference is in the division between general and vocational qualifications. This is also the outcome with the largest remaining direct effect in percentage points, together with entry into universities.

On the other hand, the smallest social origin differences are found in the route taken to enter university, which is already a highly selected group. What we see here is that young people from lower social origins are more likely to take the less traditional route and proportionately more of them enter via polytechnics than directly. Therefore, we argue that the possibility to use this route enhances equality of opportunity in access to university education. Making it more difficult for young people who have begun studying at one tertiary-level course to enter another, which is the purpose of current policy proposals, would likely increase social origin differences.

In addition to providing a less socially selected route into universities, another way in which polytechnics have reduced social inequalities in university education has been by diverting children of university-educated parents away from universities and into polytechnics. Whereas in previous cohorts approximately 60 per cent of young people with at least one university-educated parent had entered university by the age of 24 (Kivinen, Hedman and Kaipainen 2007: Table 1), in the cohort we study this proportion had fallen to approximately 45 per cent. Therefore, despite the fact that polytechnics were not established with the aim of promoting equality of opportunity but rather as a way to increase the education level of the population as a whole, due to these two processes they have in fact ended up doing so even at the university level.

The results also demonstrate interesting gender differences in educational achievement and attainment. Overall, women have overtaken men at all levels of education in Finland. However for all our dependent variables, once previous performance (and prior educational pathway) has been taken into account, women are less likely to attain the more prestigious qualifications and access the higher and more selective levels of education. There are many potential explanations for this pattern and it is beyond the scope of this chapter to investigate these further. However, what is clear is that there is still pressure for further increases in the proportion of women at higher levels of education, thus continuing the feminization of higher education as well as the labor force.

In conclusion, what our results show is that the educational system in itself can only go so far in enhancing equality. There are many features in the Finnish educational system that promote equality of opportunity and the Finnish education system has repeatedly been found to be among the most equal among Western countries (OECD 2004; Hertz et al. 2007; Pfeffer 2008). Nevertheless, we have found social inequalities along the educational pathway to be persistent and substantial. There is one aspect of the educational system that could still be changed in order to reduce social inequalities: the entrance examination system. It is highly likely that this system favors children from more advantaged families, whose parents can support them better both in terms of information and finances as they prepare (often over a number of years) for these examinations. Nevertheless, as this is by no means

the only step along the educational pathway at which social differentiation emerges, it is clear that this is not the only reason for the inequalities that currently exist.

ACKNOWLEDGEMENTS

ENDNOTES

[1] PISA tests 15 year-olds and Finns are normally aged 15–16 when they leave compulsory education. The first two PISA tests were in 2000 and 2003, thus covering the school-leaving cohorts of those years as well as the following ones to some extent.

REFERENCES

Breen, Richard and Goldthorpe, John H. (2001), 'Explaining educational differentials: towards a formal rational action theory', in David B. Grusky (ed.), *Social Stratification: Class, Race and Gender in Sociological Perspective* (2nd ed.), Boulder, CO: Westview Press, pp. 459–70.

Erola, J. (2009), 'Social mobility and education of Finnish cohorts born 1936-75: succeeding while failing in equality of opportunity?', *Acta Sociologica*, **52** (4), 307–327.

FNBE (Finnish National Board of Education) (2009), *Yliopistojen opiskelijavalinnat valmiit* [University admission decisions ready]. Available at: http://www.oph.fi/lehdistotiedotteet/2009/008 (last accessed 11.2.15).

FNBE (Finnish National Board of Education) (2010), *Ammattikorkeakouluihin pääsi 22 700 opiskelijaa* [Polytechnics admitted 22,700 students]. Available at: http://www.oph.fi/lehdistotiedotteet/2010/019 (last accessed 11.2.15).

Hertz, T., T. Jayasundera, P. Piraino, S. Selcuk, N. Smith and A. Verashchagina (2007), 'The inheritance of educational inequality: international comparisons and fifty-year trends', *The B.E. Journal of Economic Analysis & Policy*, **7** (2), Article 10.

Hillmert, S. and M. Jacob (2003), 'Social inequality in higher education. Is vocational training a pathway leading to or away from university?', *European Sociological Review*, **19** (3), 319–34.

Kallio, Johanna, Timo Kauppinen and Jani Erola (2014), *Cumulative Socioeconomic Disadvantage and Secondary Education in Finland*, Unpublished manuscript, University of Turku.

Kerr, S. P., T. Pekkarinen and R. Uusitalo (2013), 'School tracking and development of cognitive skills', *Journal of Labor Economics*, **31** (3), 577–602.

Kilpi-Jakonen, E. (2011), 'Continuation to upper secondary education in Finland: children of immigrants and the majority compared', *Acta Sociologica*, **54** (1), 77–106.

Kilpi-Jakonen, E. (2012), 'Does Finnish educational equality extend to children of immigrants? Examining national origin, gender and the relative importance of parental resources', *Nordic Journal of Migration Research*, **2** (2), 167–81.

Kivinen, O., J. Hedman and P. Kaipainen (2007), 'From elite university to mass higher education. Educational expansion, equality of opportunity and returns to university education', *Acta Sociologica*, **50** (3), 231–47.

OECD (Organisation for Economic Co-operation and Development) (2004), *Learning for Tomorrow's World: First Results from PISA 2003*, Paris: OECD Publishing.

Pekkarinen, T., R. Uusitalo and S. P. Kerr (2009), 'School tracking and intergenerational income mobility: Evidence from the Finnish comprehensive school reform', *Journal of Public Economics*, **93** (7–8), 965–73.

Pfeffer, F. T. (2008), 'Persistent inequality in educational attainment and its institutional context', *European Sociological Review*, **24** (5), 543–65.

Raftery, A. E. and M. Hout (1993), 'Maximally maintained inequality: expansion, reform, and opportunity in Irish education, 1921–75', *Sociology of Education*, **66** (1), 41–62.

Table 1. Descriptive statistics (in per cent) of educational transitions by highest parental education

	Upper secondary qualification		Vocational qualification (if any)	General qualification (if any)	Higher education entry (if qualification)			
	No qualification	Upper secondary qualification	Vocational qualification (if any)	General qualification (if any)	No qualification (if qualification)	No HE entry (if qualification)	Polytechnic (if HE entry)	University (if HE entry)
University	5,6	94,4	14,0	86,0	20,7	79,3	38,4	61,6
Lowest-level tertiary or general secondary	10,2	89,8	32,7	67,3	38,0	62,0	61,2	38,8
Vocational secondary	17,2	82,8	55,4	44,6	58,5	41,5	73,0	27,0
Less	30,3	69,7	65,8	34,2	70,0	30,0	74,3	25,7
All	13,8	86,2	39,2	60,8	43,9	56,1	57,0	43,0
N	15434		13301		13301		7459	

	No HE entry (if voc. qual.)	Polytechnic (if voc. qual.)	University (if voc. qual.)	No HE entry (if gen. qual.)	Polytechnic (if gen. qual.)	University (if gen. qual.)	Entry via	
							Polytechnic (if univ. entry)	Direct entry (if univ. entry)
University	75,9	22,8	1,3	11,7	31,7	56,5	11,3	88,7
Lowest-level tertiary or general secondary	76,8	22,5	0,7	19,2	45,4	35,3	14,8	85,2
Vocational secondary	85,7	14,1	0,2	24,7	50,5	24,8	14,8	85,2
Less	89,0	10,4	0,6	33,3	45,2	21,5	20,0	80,0
All	83,1	16,4	0,5	18,7	42,0	39,3	13,2	86,8
N	5210		8091		3207			

Table 2. Models of upper secondary qualification: gaining any and type of qualification, results as

	Upper secondary qualification (vs. none)		General vs. vocational qualification	
	Model 1a	Model 1b	Model 2a	Model 2b
Highest parental level of education (ref. University degree)				
Lowest-level tertiary or general secondary	0.51***	0.82**	0.32***	0.45***
	(0.05)	(0.08)	(0.02)	(0.04)
Vocational secondary	0.27***	0.70***	0.12***	0.20***
	(0.02)	(0.06)	(0.01)	(0.02)
Less	0.14***	0.46***	0.08***	0.19***
	(0.01)	(0.05)	(0.01)	(0.02)
Average grade (centered at 7.5)		4.42***		18.13***
		(0.18)		(0.95)
Average grade missing		0.20***		0.72
		(0.02)		(0.20)
Female	1.64***	0.81***	2.30***	0.81***
	(0.08)	(0.05)	(0.09)	(0.04)
Registered language (ref. Finnish)				
Swedish	1.30**	1.31+	1.12	1.25+
	(0.17)	(0.18)	(0.11)	(0.16)
Other	0.41***	0.49***	0.94	1.61**
	(0.05)	(0.07)	(0.14)	(0.32)
Constant	14.06***	12.68***	4.36***	2.16***
	(1.08)	(1.06)	(0.23)	(0.15)
Observations	15,434	15,434	13,301	13,301

*** $p<0.01$, ** $p<0.05$, + $p<0.1$

Table 3. Models of higher education entry: any entry, type entered and route taken to enter, results as odds ratios

	Higher education entry (vs. not)			University entry vs. polytechnic			Direct entry to university vs. via polytechnic		
	Model 3a	Model 3b	Model 3c	Model 4a	Model 4b	Model 4c	Model 5a	Model 5b	Model 5c
Highest parental level of education (ref. University degree)									
Lowest-level tertiary or general secondary	0.42*** (0.02)	0.65*** (0.04)	0.74*** (0.05)	0.40*** (0.03)	0.44*** (0.03)	0.49*** (0.03)	0.75** (0.09)	0.76** (0.09)	0.80+ (0.10)
Vocational secondary	0.18*** (0.01)	0.43*** (0.03)	0.51*** (0.03)	0.23*** (0.01)	0.28*** (0.02)	0.33*** (0.02)	0.76+ (0.09)	0.77+ (0.09)	0.86 (0.13)
Less	0.11*** (0.01)	0.30*** (0.03)	0.41*** (0.03)	0.22*** (0.01)	0.28*** (0.02)	0.36*** (0.02)	0.48** (0.11)	0.54** (0.11)	0.66 (0.20)
General upper secondary qualification		17.40*** (0.85)	5.84*** (0.34)		26.20*** (5.39)	9.20*** (1.94)		6.21*** (2.57)	3.01** (1.33)
Average grade (centered at 7.5)			3.71*** (0.16)			4.91*** (0.28)			2.21*** (0.22)
Average grade missing			0.44*** (0.11)			0.94 (0.32)			2.48 (2.07)
Female	1.57*** (0.06)	0.98 (0.05)	0.61*** (0.03)	1.06 (0.05)	0.91+ (0.05)	0.49*** (0.03)	0.84 (0.09)	0.83+ (0.09)	0.59*** (0.07)
Registered language (ref. Finnish)									
Swedish	1.43*** (0.13)	1.55*** (0.17)	1.68*** (0.19)	1.41*** (0.15)	1.47*** (0.16)	1.86*** (0.22)	1.83** (0.45)	1.89** (0.47)	2.15*** (0.54)
Other	0.70** (0.10)	0.64*** (0.11)	0.80 (0.14)	1.00 (0.21)	0.99 (0.21)	1.32 (0.31)	4.04+ (2.95)	4.24** (3.12)	5.21** (3.85)
Constant	3.09*** (0.14)	0.40*** (0.03)	0.53*** (0.04)	1.52*** (0.07)	0.07*** (0.01)	0.05*** (0.01)	8.14*** (0.79)	1.34 (0.56)	1.28 (0.56)
Observations	13,301	13,301	13,301	7,459	7,459	7,459	3,207	3,207	3,207

*** p<0.01, ** p<0.05, + p<0.1