

Track-mobility in Secondary Schools

A comparison of intra-secondary transitions in Germany and the Netherlands

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Abstract

Previous research on track mobility based on rational choice theory on educational decisions has found that in particular children from higher social classes use the opportunities to upgrade in tracks for reasons of status maintenance, whereas children from lower classes are more likely to downgrade (e.g. for Germany: Hillmert/Jacob 2005).

However, these studies were limited to one country. But particular institutional variations in the costs or risks of different alternatives and of track mobility may have influence on family background effects. Therefore we extend existing research by comparing two countries, Germany and the Netherlands, which both offer a tracked educational system, but differ in the shape and structure of the different tracks. For example, the systems offer a different array of educational tracks and alternatives to choose and to change, and they differ in the extent of spatial and institutional cooperation of different schools. Both countries also established educational reforms in the late sixties, with the aim to increase track mobility between tracks. These reforms have been more far-reaching in the Netherlands than in Germany, therefore we expect changes in social selectivity over time and differences between the two countries.

In our empirical analyses using data from the Family Survey Dutch Population and the German Life History Study we find that total track mobility increased in Germany and decreased in the Netherlands. While the probability to make a transition to a higher and to a lower track significantly increased in Germany, the changes in the Netherlands can be attributed to shifts in the risk structure within the educational system. The probability of taking a supplement after the first secondary graduation increased in both countries. In both countries, the structural reforms of the educational systems remained ineffective in terms of reducing social selectivity of intra-secondary transitions.

1. Introduction

Educational systems that are divided into several hierarchical tracks are frequently criticized for being socially selective and for sorting students into predetermined educational careers at a very early age. However, comparing two tracked systems, Germany and the Netherlands reveals that despite both systems being tracked in a very similar way, the inequality patterns differ between the two countries. In fact, effects of family background on educational attainment appear to be considerably lower in the Netherlands than in Germany (Blossfeld/Shavit 1993; Prenzel et al. 2003: 24; Breen et al. 2005). This suggests that the country-specific institutional configuration of those tracked systems and the track mobility might play a role for inequality as well. This paper examines in how far the opportunity of up- or downgrading in secondary tracks is used social selectively and in how far different institutional settings can enhance or weaken these effects.

Germany and the Netherlands qualify for such a comparison because the two educational systems bear comparable features considering their tracked structure and their history of educational reforms which aimed at increasing track mobility. However, the institutional configuration of the tracked systems differs in detail in particular with regard to separation of the tracks and the opportunities to change tracks that might cause differences in family background effects in intra-secondary transitions.

Research using German data (Henz 1997a/b; Mauthe/Rösner 1998; Hillmert/Jacob 2004) shows that in the past decades educational careers have prolonged and the ways to reach the final secondary graduation have diversified. In hierarchically ordered tracks it is possible to upgrade one's educational career by changing to a more demanding and prestigious track or vice versa to downgrade to a lower track. Even after having completed a particular track successfully, the final educational attainment may be reached later by complementing another higher secondary track. These changes during the educational career are particular relevant for social stratification research if they are used in a socially selective way. The main argument of the reformers in the sixties was that inequality that emerged at the first transition from primary to secondary school might be reduced by offering more permeability between tracks (Kemenade 1987, Skiera 1991, Picht 1964). Especially those children should profit from the increased permeability who chose a track below their actual potential in the first place. Indeed

are children from low-SES families most likely to take detours to higher secondary diploma, but this apparently is a consequence of the higher ‘absolute’ upgrade-probability in lower tracks. The ‘relative’ transition rates (odds) however, indicate that the opposite is the case in Germany: Children from privileged families have an above average likelihood of making upward transitions, either before or after their first diploma (Henz 1997a/b; Hillmert/Jacob 2004).

We suspect however, that social selectivity of intra-secondary transitions is depending on the institutional setting. Erikson & Jonsson (1996) point out that institutional barriers especially affect children from disadvantaged households. By comparing two hierarchically tracked educational systems the following research questions will be answered:

1. In how far has the institutional configuration effects on the extent of inter-track mobility within secondary education?
2. Does social selectivity of track-mobility differ in the two countries?

In the following we will give a short introduction of the micro theoretical background, outline the two educational systems and their changes during the past decades and derive hypotheses on basis of the different cost and utility structures of both systems. In chapter four we test these with data from the German Life History Study and the Dutch Family Survey. Finally, we discuss our results and conclusions for educational policy.

2. Theoretical background

2.1 Educational decisions

The rational choice approach assumes that individuals make their educational decisions based on the perceived ratio of costs, utility and risk perception (cf. Boudon 1974, Erikson/Jonsson 1996, Breen/Goldthorpe 1997, Becker 2000, Need/Jong 2001). According to the rational choice approach, the educational advantage of children from high socioeconomic (SES) backgrounds comes about through the different distribution and perception of these parameters. Children from highly educated parents perform better at school and therefore have a higher success probability in education. This cognitive advantage is due to the cultural and educational resources in the family of origin and is conceptualized as “primary” effect in the educational decision process (Boudon 1974). Besides, children from high-SES

background profit from material resources which enable their parents to bear the direct and indirect costs of education. Further, highly educated parents are more familiar with higher education and are less hesitant to send their children to more demanding tracks. Parameters influencing educational decisions beyond measured performance are conceptualized as “secondary” effects. Core argument of more recent approaches to explain social differences in decisions is the relative risk aversion (Breen/Goldthorpe 1997, Goldthorpe 1996, Need/Jong 2001) According to these approaches, the utility of educational credentials is not the status position as such, but the avoidance of status descent – which is actually independent of class. In short, parents will encourage their children to strive for at least the same educational level as their own, irrespective of class.

2.1.1 The rational choice approach in intra-secondary transitions

The rational choice approach can be applied to the decision process for transitions within secondary education in a tracked system, when students have to decide whether to upgrade or downgrade during secondary education or to continue secondary education after having already complemented a particular track. In the following section we outline the three different situations and give a brief overview of decision processes connected to these.

Downgrading is mainly an option when the educational track is too demanding and disburdens a student. However, the student has to accept a lower diploma than planned initially. An alternative option to downgrade is to repeat a term. The student has to balance the risk of status descent against the direct and indirect costs of one additional year of education. High SES parents have more cultural and material resources to support their children to secure their place in the higher track. Furthermore, high SES parents attach more value to a higher diploma as this secures their status maintenance, while low status parents are more easily satisfied with a lower diploma. We thus expect that downgrading is least likely for those students whose status maintenance would be seriously threatened by downgrading, i.e. if they would lack behind their parents’ educational level.

Upgrading also is a matter of cost- and utility-balance. An upgrade is an option for students whose performance is clearly above expectations. We identify two possible scenarios. Rational choice theory suggests that children from disadvantaged background are more likely

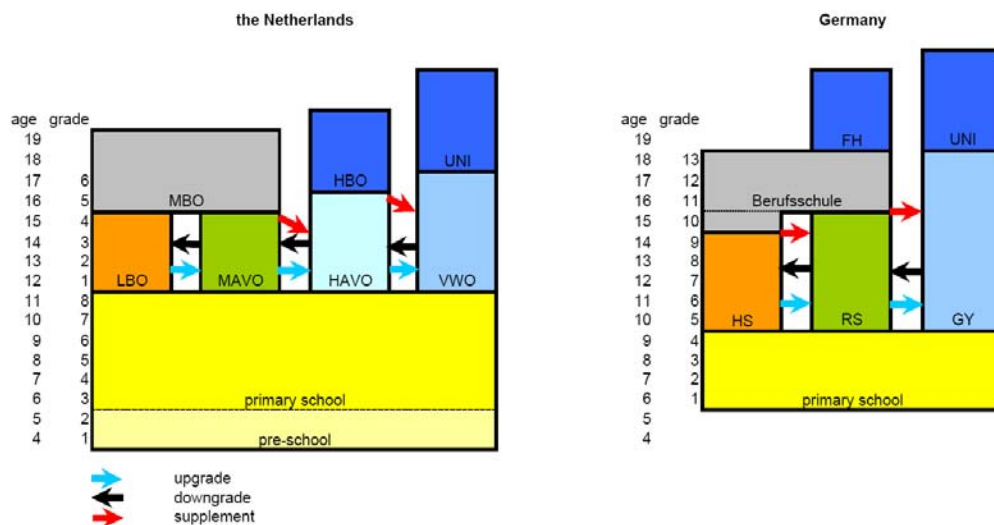
to choose lower tracks at the first transition, even when their performance would allow a more ambitious choice right away, therefore they are more likely to over-perform and be eligible for an upgrade. Consequently, a higher upgrade probability would result from the composition of the group at risk. On the other hand, we should expect the decision mechanisms for within-secondary transitions to be the same as those at the institutionalised transitions. Following the logic of the status maintenance argument, it is likely that especially those students upgrade who have not reached their parents' level of secondary education yet.

Students also have the option of taking a “*supplement diploma*” after their first graduation from secondary school. Instead of upgrading during the initial secondary track, they can obtain a diploma from this track and continue education in a higher track afterwards. We assume that opportunity costs play a more prominent role here than in other transitions. Having graduated from lower or intermediate secondary education usually qualifies for direct entry into the paid labour market or for vocational education. Therefore supplements bear clear advantages only when qualifying for tertiary education. In the same way as “upgrades” are predominantly taken by students who have to reach a higher secondary diploma in order to reach the educational attainment of their parents, supplements probably are used as an instrument for status maintenance by children from higher educated parents, too.

2.2. Institutional configurations in Germany and the Netherlands

In the previous sections we already got some general hypotheses concerning the social stratification in track mobility. In the following section, we want to derive some more specific hypotheses on intra-secondary transitions taking into account different institutional configurations in two countries. We argue that the configuration of the tracked systems can have an influence on the cost- and utility structure of intra-secondary transitions, thus modify the pattern of social selectivity. We give a short introduction of the educational systems of both countries and describe the options of making intra-secondary transitions. Afterwards we point out differences that might generate differences in socially selective transition probabilities.

Figure 1: Schematic illustration of the Dutch and the German educational systems and the possibilities to upgrade, downgrade and supplement



2.2.1 Germany

In Germany, the educational system is subject to the authority of the 16 federal states. Despite being different in detail, the structure of the educational system is standardized in general lines throughout all 16 states. Compulsory education starts at the age of six years, when children enter primary school, which lasts usually four years¹. At the age of ten most students have to choose between three different tracks: *Hauptschule*, *Realschule* and *Gymnasium*. The different tracks are usually independent in housing and administration and only very little collaboration between school types takes place. Despite some overlap in the curricula, the teacher training is specific for each of the school types and exchange hardly takes place. There are also comprehensive schools in some states, but the share of students choosing these schools never exceeded 10% of a year group.

Hauptschule is the least demanding and least prestigious track. It lasts five years and prepares students mainly for occupations in the manual and lower service sector. *Realschule* takes six years and is more demanding than *Hauptschule*, leading to an intermediate secondary qualification. Instruction is less focussed on practical-vocational skills but on more general contents. Entry to vocational training and apprenticeships is formally not restricted but

¹ A few federal states offer a two-year extension of primary school (either as regular duration of primary school or as a separate so-called 'Orientierungsstufe').

market-regulated, i.e. finding an apprenticeship depends on available places, recruiting practices of firms and particular requirements of the job. Thus, in fact the training places and occupations prospects of graduates of *Hauptschule* are less favourable than for graduates of *Realschule*.² *Gymnasium* offers a nine year pre-academic course. This track is the most demanding and most prestigious track in Germany. Graduation from the *Gymnasium*, the *Abitur*, qualifies for all post-secondary and tertiary institutions.

Upgrades and supplements are possible for students and graduates from *Hauptschule* and *Realschule*. In recent years, some of the typical occupations for graduates from these schools became so popular, that applicants for the scarce training positions frequently face the competition of applicants with higher qualifications like *Abitur*. Meanwhile the possibilities to supplement the *Hauptschule* graduation with a higher certificate are manifold. Instead of making the transition to the tenth year of a *Realschule*, the intermediate secondary diploma can be obtained within vocational training. A supplement from a *Realschule* diploma to *Abitur* however, still requires the effort of a transition to *Gymnasium*, extra courses during vocational training or during further vocationally-oriented training. Thus, the opportunity costs are rather high. Apart from that, the risk of failure is quite high (Bellenberg, 1999, Rösner, 1998).

2.2.2. The Netherlands

Most Dutch students enter the educational system at the age of four years since pre-school and primary-school have been centralized to *basisonderwijs* in 1984. Full compulsory schooling begins at the age of six, pupils then will remain six years in primary education and choose between four different tracks (*LBO*, *MAVO*, *HAVO*, *VWO*) afterwards. The structure and contents of these tracks resembles those of the German educational system with *LBO* (four years) and *MAVO* (four years) being equivalent to *Hauptschule* and *Realschule* and *VWO* (six years) being equivalent to *Gymnasium*. The only exception is *HAVO* (five years) which offers intermediate general education but qualifies for direct entry into lower tier tertiary education (vocational colleges). Apprenticeships are not common practice in the Netherlands; vocational education is taken either at *MBO* (intermediate vocational schools) or at *HBO* (vocational colleges). *MBO* does not explicitly require any previous qualifications;

² Graduates of *Realschule* are also eligible to enter full time vocational schools, which offer training for para-medical occupations and a variety of intermediate jobs in trade, finance and industry.

LBO and *MAVO* leavers enter *MBO* and can supplement their graduation for *MAVO* or, if they failed to graduate earlier, they can repeat the attempt for graduation. *HBO* requires graduation from *HAVO* or *VWO* for admission and universities only give admission to *VWO* graduates. Unlike in Germany, many schools are organised in so-called school communities, which combine two, three or even four of the secondary school types. These school communities consist of separate school types with own curricula and specifically trained teachers sharing buildings and administration. Currently, 90% of all Dutch students visit such a school community.

2.3. Social selectivity in intra-secondary transitions: comparing the German and the Dutch system

In the following sections we specify the above mentioned general hypotheses about socially selective educational transitions. We have a look at the different circumstances and institutional settings under which the intra-secondary transition decisions come about in Germany and the Netherlands. In both educational systems students have the opportunity to up- or downgrade within secondary education or to supplement their first secondary diploma with a higher secondary diploma. However, these different pathways through secondary education are the result of reforms which will be summarized in the next chapter. Afterwards we derive our expectations concerning the quantity and selectivity of intra-secondary transitions in both countries.

2.3.1 Reforms in Germany and the Netherlands

Both systems underwent educational reforms at the end of the 1960's which had the aim to make the educational systems more meritocratic and flexible. The allocation to the school types should be improved by teacher recommendations. This should decouple secondary school choice from parental background and ensure that students are allocated more on basis of their previous performance than based on the request of their parents. A second aim was to flexibilise the educational pathways and make intra-secondary transitions easier. In the Netherlands, a standardized test at the end of primary school should help the teacher to determine the potential of the student and give a recommendation for an appropriate school, while the introduction of a "bridge-class" during the first year of secondary school in school communities had the aim to postpone the decision for a track by another year. A similar aim

was pursued in Germany by the introduction of six-year primary schools and two-year intermediate schools between primary and secondary education. However, in both countries, these provisions were not established consistently and are restricted to regions, federal states or institutions. In the Netherlands the introduction of school communities had the aim to minimise the administrative effort of intra-secondary transitions and remove the threshold of leaving the old school and friends when students want to up- or downgrade.

Another consequence of the reforms in both countries is that there is less pressure to upgrade as soon as possible, because both countries facilitated supplements after the first secondary diploma. The curricula in both countries were harmonized in such a way that the effort for catching up became manageable. This also made supplementing much easier. However, Germany and the Netherlands differ in the pathways to a supplement. German students directly pass into the higher track. When they leave the ninth grade of *Hauptschule*, they may enter the tenth grade of *Realschule*. After graduating from *Realschule* they enter *Gymnasium* in the 11th grade, sometimes restricted to performance and grades. A Dutch student has to enter the year below the next year first. After having finished the 4th year of *MAVO* he has to enter the 4th year of *HAVO* for a supplement. A *HAVO* graduate may enter *VWO* in the 5th grade. Dutch students thus repeat one year in their educational career when they want to supplement.

2.3.2 Quantity and social selectivity of intra-secondary transitions in Germany and the Netherlands

We expect several differences in quantity and selectivity of intra-secondary transitions. The first reason is a statistical argument because the period in secondary education is shorter in the Netherlands than in Germany: Dutch students choose their type of secondary education at the age of twelve years; in school communities, or, where the first year of secondary education serves as bridge-year, even later, at the age of thirteen. In Germany, the decision to choose a particular track has to be taken is two years earlier, at the age of ten. The rate of intra-secondary transitions should consequently be lower in the Netherlands for two reasons: First, the remaining time for making intra-secondary transitions is shorter. Second, the track-allocation probably is less erratic as students have two/three more years to develop their skills which make a prognosis for future potential more accurate.

Second, we argue considering the content of the reforms in both countries: In both countries, one aim of the reforms at the end of the 1960s was to make the track choice after primary school more dependent on previous performance. The choice for a secondary school type in both countries should be less driven by parents' will and more driven by teacher recommendations. If this policy is conducted consistently, the need for upgrades and downgrades should be reduced in both countries. As teacher recommendations based on the student's performance – supported by a proficiency test – are more important in the Netherlands, the allocation of students into the different tracks might be less dependent on parental aspirations. Thus we expect less mobility between tracks in the Netherlands. However, in Germany the curricula of the tracks were converging and *Hauptschule* was prolonged to nine years, thus facilitating (upward) transitions of over-performers. Thus, one might also expect higher mobility rates in Germany in the post-reform period.

Furthermore, both countries established several possibilities to supplement after the first secondary diploma. This is relieving the pressure to upgrade during secondary school, because the perspective to be able to obtain another higher diploma afterwards probably appears to be less risky to most students and their parents. Summing up, the effect of the educational reforms is ambiguous. On the one hand the need for up- or downgrades should be reduced by improved track-allocation and the option of supplementing diploma but on the other hand track mobility was facilitated in terms of spatial barriers by introducing school communities in the Netherlands or by formally adapting the curricula in Germany.

Summarizing our expectations with regard to the occurrence of track mobility during secondary education we derive the following hypotheses:

Hypothesis 1: Because of the shorter time at risk for students to change tracks and better track allocation in the Netherlands the total track mobility should be lower in the Netherlands than in Germany.

Hypothesis 2: As the effects of the educational reforms on the occurrence of track mobility are ambiguous and counteracting, we expect only a moderate increase of up- and downgrades in both countries.

Hypothesis 3: As the educational reforms strengthened an attractive alternative to up- and downgrades, namely the supplement, we expect an increase in the quantity of supplements in both countries.

The theory of rational choice in educational decisions suggests social selectivity in intra-secondary transitions. We expect that especially for upgrades risks and drawbacks are accumulated in such a way that only those students will upgrade who are very ambitious, ascribe much value to a higher diploma and can rely on parental support. Children of highly educated parents with high SES have an advantage here. They will be most likely to make an intra-secondary transition when they currently are on a school type which is below the secondary education level of their parents. Thus, we derive

Hypothesis 4: Children from higher social backgrounds are more likely to upgrade and less likely to downgrade than children of less privileged backgrounds. Up- or downgrading occurs in particular in those cases when the children currently are on a school type which is below the parents' education.

There are, however, some details in the institutional settings of the educational system of both countries that make differences in the degree of selectivity likely. In Germany, the transition to a different school type still involves administrative efforts and the student has to leave his school, his friends, the familiar environment of his old school, etc. In the Netherlands intra-secondary transitions are facilitated through the introduction of school communities. The school communities comprise several school types under one roof and administration so that a student who wants to upgrade does not have to give up his familiar school surroundings and his friends. The administrative effort is reduced to a minimum and changing track is less interrupting for a student. We assume that these administrative and social thresholds are more severe for students from lower-SES families and removing them might attenuate the effects of family background. This leads us to

Hypothesis 5: The effects of family background on track mobility are lower in the Netherlands than in Germany, in particular after the educational reforms in the Netherlands social selectivity decreased.

Institutional differences between countries are also manifest in the pathways to acquire a higher schooling certificate after having left school for the first time. We expect the supplements which give eligibility for tertiary education to be most popular. Those are the *Abitur* in Germany and *HAVO* and *VWO* diplomas in the Netherlands. In Germany, students can continue in the subsequent year group right away, while a Dutch student has to repeat one year to supplement. The advantage might be that the risk of failure in the Netherlands is smaller because the students get prepared for the challenges of the higher track in the repetition year. Furthermore, the opportunity costs are lower in the Netherlands. They spend two additional years in education for a supplement while Germans have to invest three years in the case of aiming at *Abitur*. Admittedly, the qualification improvement is higher in Germany, because German students can obtain university eligibility in any case, while Dutch students who supplement with *HAVO* only have eligibility for lower tier tertiary education. But the low opportunity costs, combined with the low risk of failure probably make the supplement option attractive for children from disadvantaged backgrounds. From these considerations we derive

Hypothesis 6: Family effects for supplements are lower in the Netherlands than in Germany.

3. Data, Operationalizations and Methods

Analysing track mobility and the attainment of a second schooling certificate cannot be done by using cross-sectional data, as they usually contain only the highest educational attainment of respondents. We therefore need data on complete educational careers, including longitudinal information about transitions within and after secondary education. For Germany, the retrospective longitudinal study of the (West)-German Life History Study from the Max-Planck-Institute in Berlin provide such datasets for several German birth cohorts.³

³ We only take the West-German respondents into account to ensure comparability between institutions.

For our analyses we use the information of cohorts born in 1939-41, 1949-51, 1954-55, 1959-61, 1964 und 1971. We can use 6379 respondents for the empirical analyses. For the Netherlands, the Family Survey of the Dutch Population is a four wave (1993, 1998, 2000, 2003) repeated cross-section study on a representative sample of the Dutch population. The dataset contains detailed information about the educational careers of the respondents and their family of origin. Unlike the Life History Study this dataset is not a cohort study but comprises respondents from all birth years between 1914 and 1985. In order to ensure comparability between the two datasets as far as possible, we excluded all respondents who were born before 1935 and after 1970 from our analyses. That leaves us with 5609 respondents for the Netherlands.

We analyse transitions within the general tracks of secondary education as specified in the above description of the German educational system, thus *Hauptschule*, *Realschule* and *Gymnasium*.⁴ Upgrades are those transitions which occur in secondary education before the first secondary graduation and comprise all transitions to higher tracks according to the hierarchy of tracks. Downgrades are transitions to lower tracks. Supplements in general education are defined as having achieved a higher diploma after the first secondary graduation. In the German case, we include also certificates of general education that are obtained within vocational education by passing an extra exam. In the Dutch case, upgrades, downgrades and supplements are defined analogously, but within the Family Survey we cannot identify supplements that are obtained in vocational institutions.⁵ In the multivariate analyses of supplements we exclude all students who left the general secondary education without any diploma.

Family background is measured as formal education of the highest educated parent. For comparability of the two datasets we use three categories: lower secondary school or less (low educated parents); higher secondary or vocational training (medium) and tertiary education. (high). Status maintenance is operationalised by the relative educational level of the parents compared to the child's in a dichotomous variable: If the student attends a lower track (has

⁴ Other schools that cannot clearly be identified by attendance to one of the tracks like *Gesamtschule*, *schools for special needs* and *Reformpädagogische Schule* are summarised as 'others schools'.

⁵ Post-secondary non tertiary educational tracks like MBO in the Netherlands and Berufsschulen/Berufsfachschulen are not defined as supplements.

attained a lower diploma) than the final secondary graduation of the highest educated parent, the variable is coded 1, otherwise 0. Changes across time are tested with cohort dummies. For comparability the respondents of the Dutch Family Survey are clustered into cohorts that grossly correspond with the cohorts of the German Life History Study. As we do not analyse separate tracks for reasons of parsimony, we use dummies for the initial secondary track chosen at the first transition from primary to secondary education. These dummies are introduced as control variables to ensure that no bias from shifting allocation distribution distorts our results.

In the following sections, we present some descriptive analyses. In the multivariate analyses we use multinomial logit models to model upgrades and downgrades simultaneously and we applied binary logits for modeling the supplements.

4. Results

4.1 Descriptive results

4.1.1 Initial track allocation

Probabilities for intra-secondary transitions are structured by the distribution of students into the different tracks after they have left primary school. This distribution and its social selectivity determines the population at risk as well as social selectivity for up- and downgrades and supplements.

Figure 2 and 3 show the initial track choice in both countries by cohort. Educational expansion is manifest as increasing participation in higher secondary tracks in both countries. In Germany participation in *Hauptschule* decreases dramatically and the proportion of students entering *Gymnasium* is increasing. In the two youngest cohorts born in 1964 and 1971 the introduction of new school types like *Gesamtschule* is reflected in the data as nine percent of the respondents chose one of those. We also observe educational expansion and increasing rates of students in higher school tracks in the Netherlands. Especially, the proportion of students in *LBO* is decreasing over time while participation in *HAVO* is increasing. A consequence of this increasing participation in intermediate and higher tracks of

secondary education is the increasing number of students at risk to downgrade and the decreasing number of students at risk to upgrade.

[figure 2 about here]

[figure 3 about here]

Track allocation to intermediate and higher tracks is not only increasing over time but also depends on the educational background of the parents. In tables 1 and 2 we show the distribution of the initial track choice after primary school by three categories of parental education. The general pattern of track allocation is quite similar in Germany and the Netherlands. In both countries the transition after primary school into one of the different tracks is strongly related to the parents' education. In Germany most children of low educated parents enter *Volks-/Hauptschule* which is the least prestigious track, whereas the majority of children of highly educated parents enter the highest track, the *Gymnasium*. In the Netherlands the share of children who enter the lowest track (*LBO*) is lower and the share of children from highly educated parents who enter *VWO* or *HAVO* is also slightly lower than in Germany.

[table 1 about here]

[table 2 about here]

4.1.2 Track mobility and educational supplements

Among the 6379 respondents of the German data 563 (= nine percent) have changed the schooling track at least once during secondary school.⁶ Almost 50 percent of all transitions during secondary school in Germany are upgrades, 31 percent can be classified as downgrades (Table 3, bottom row). The remaining 20 percent are lateral transitions or transitions which cannot be clearly identified by the attended school type⁷.

[table 3 about here]

⁶ 56 respondents changed tracks twice, two persons even three times during secondary school.

⁷ The lateral transitions and the transitions which cannot be clearly identified as upgrades or downgrades are included in our analyses but results are not reported in the tables.

[table 4 about here]

In particular students of the *Hauptschule* use the opportunity to upgrade: 18 Percent of all observed transitions are from *Hauptschule* into the medium track *Realschule*, another five percent from *Hauptschule* into *Gymnasium*. Upgrading is also possible from *Realschule* to *Gymnasium* occurring in 23 percent of all transitions. Downgrading from *Gymnasium* to *Realschule* or *Hauptschule* is observed in 22 percent (without table).

In the Netherlands we observe 555 intra-secondary transitions before obtaining the first diploma (table 4, bottom row). Unlike in Germany, most of these transitions are downgrades (62 percent) and only ten percent of the transitions leads to a higher track. The remaining 30 percent are lateral transitions to the same or a comparable level of secondary schooling. Among all upgraders, *MAVO* students are the largest group (70 percent). *MAVO* also contributes 53 percent of all downgrades. 18 percent of all downgrades and 6 percent of all upgrades are from *HAVO* and 24 percent upgraders started their educational career in *LBO* while 28 percent of all downgraders come from *VWO* (without table).

Tables 5 and 6 show supplement frequencies in both countries. In Germany eleven percent of all respondents that completed school successfully obtain another higher secondary schooling certificate. In 58 percent of these cases the *Abitur* is obtained after having successfully completed *Realschule* or *Hauptschule*. Of all Dutch students who obtain a secondary graduation, nine percent decide to supplement this with a higher secondary diploma. Supplements that qualify for entrance to institutions of tertiary education are most common in the Netherlands, more than 80 percent of all supplements are obtained either at *HAVO* or *VWO*. Thus, in both countries school leavers with a low or medium diploma attain the prerequisite to enter tertiary education afterwards.

[table 5 about here]

[table 6 about here]

Comparing intra-secondary transitions over cohorts we find an increase in total track mobility in Germany while total track mobility in the Netherlands decreases over time (table 3 and 4

above). In Germany the share of up- and downgrades both decrease, so the increase of total track mobility can only be attributed to an increase of intra-secondary transitions that are lateral or cannot be identified as up- or downgrades. Part of this increase is due to the growing number of comprehensive schools in Germany, which are untracked. In the Netherlands the share of upgrades decreases while the share of downgrades increases over time.

[figure 4 about here]

Figure 4 shows that in both countries children from highly educated parents have a higher rate of total intra-secondary transitions than children from lower educated parents. The downgrade rates are slightly higher in the Netherlands but increase with educational level of the parents in both countries. The upgrade probability is highest for children from lower educated parents in Germany, while in the Netherlands children from highly educated parents have a higher chance to upgrade than children from lower educated parents. However, the probability of up- and downgrading is highly dependent on the initial track

Summing up the results so far, Germany and the Netherlands do not differ very much in the quantity of intra-secondary transitions. However, they differ in the type of transitions: In the Netherlands we observe 60 percent of all transitions as downgrades, whereas in Germany only 31 percent belong to this category (plus a few more because of the transitions into schools that cannot be identified clearly). Downgrading is much more commonly used in the Netherlands than in Germany. Regarding supplements Germany and the Netherlands show comparable patterns, but the share of supplements that qualify for tertiary education is higher in the Netherlands.

4.2 Multivariate Analyses

In the following we analyse upgrades and downgrades as well as supplements using logistic regression models. For the intra-secondary transitions we use multinomial logit models to be able to estimate the effects on the different destination outcomes simultaneously compared to the reference category of students who did not change tracks. The attainment of a supplement is estimated by binary logistic models, using the reference category of school graduates that did not achieve another higher diploma after having obtained a secondary graduation. In both analyses we run three models introducing our independent variables. In the first model only

sex and (relative) parental education is included. In the second model we add cohort dummies and the initial track the student chose after primary school. To test for a varying influence of parents' education over time an interaction term consisting of a dummy for all post-reform cohorts (the post-reform cohorts in Germany are the cohorts 1964 and 1971; in the Netherlands the cohorts 56-60 and all later cohorts) and relative education of parents is included into the third model.

[table 7 about here]

In Germany (table 7) boys have a significantly lower probability to upgrade and a higher probability to downgrade than girls. These effects of gender are fairly robust under control of birth cohorts and initial track. Students, who entered secondary education in a lower track than the highest secondary education of their parents, have a four times higher probability to upgrade compared to students who entered the same or higher secondary track than their parents. The effects of relative parental education on downgrade probability are below one but do not reach significance. Controlling for cohort and initial track deflates the effect of relative parental education on upgrading but the remaining coefficient indicates that there are autonomous effects of parents' education. Upgrade probability is significantly larger than the reference category in all cohorts except from the 1949-1951 cohort with a peak in the 1954-56 and 1959-61 cohorts. In these cohorts the downgrade probabilities are particularly high but decrease to insignificance in the later cohorts. Upgrade probability is highest if *Realschule* is the initial track and is significantly lower for *Hauptschule*. The interaction between the post-reform cohorts and the relative education of the parents in model III is neither for upgrades nor for downgrades significant, thus indicating no significant changes of social selectivity over time.

[table 8 about here]

With regard to supplements in Germany (table 8), male students are again more likely to supplement their initial schooling attainment. The effects for parental education are significant and the chances of school leavers who have not already achieved their parents' level of education have twice the chances of students who have attained at least their parents'

education. These effect does not change very much controlling for cohort and initial track. Compared to the oldest cohort of 1940, members of all younger cohort are significantly more likely to supplement, in particular those born in 1950 and 1955. School leavers graduated at medium level have the highest probability to supplement even higher than those who attained only the lowest level. Introducing an interaction term between relative parental education and birth cohort, we do not find a significant trend. The effect coefficient however, is below one, indicating that the decision to obtain a supplement is decreasingly dependent of parents' relative educational level.

[table 9 about here]

For the Netherlands (table 9) we find higher downgrade- and upgrade-probabilities for boys compared to girls. Only the coefficients for upgrades are significant, however. The effects of relative parental education are significant and, regarding their magnitude, only slightly lower than those of Germany. While the probabilities for downgrading are below one but insignificant, the probability to upgrade is 3,5 times higher for children whose initial track is a school type where they cannot reach their parents' secondary educational level. The effect is only slightly reduced by controlling for initial track, indicating that parental education has a significant autonomous effect on upgrade-probabilities in the Netherlands, too. Upgrade- and downgrade-probabilities do not change significantly over time when initial track is controlled for.

[table 10 about here]

For supplements in the Netherlands, gender is of minor importance (table 10). We find significant effects for the relative educational level of the parents, those students who have obtained a secondary diploma below the secondary educational level of their parents have a two times higher chance of supplementing with a higher diploma after first graduation. Children born after 1951 have a significantly higher chance to supplement than children in the reference cohort but the trend is decelerating for the birth cohorts born later than 1961. Supplement probability is especially pronounced in the group of *MAVO* graduates. With regard to the interaction of (post-reform) cohort and education of the parents we find the same

result as in the German case: a slightly decreasing importance of parents' education over time, but the effect is not significant.

5 Summary and conclusions

Considering the results of our bivariate and multivariate analyses we come to the following conclusions. We did not find clear support for our first hypothesis. The total track mobility is indeed slightly higher in the Netherlands, however, comparing only the post-reform periods of both countries, we find slightly lower track mobility rates in the Netherlands. We expected that up- and downgrades would increase only moderately due to the ambiguous effects of the reforms in both countries (hypothesis 2). The bivariate analyses corroborate our hypotheses only partly. In Germany, the reform indeed seems to have triggered an increased total track mobility. Paradoxically, neither the ratio of upgrades nor the ratio of downgrades increased but the share of intra-secondary transitions which are not clearly identifiable as up- or downgrades. In the Netherlands, the total track mobility even decreased. Here the share of downgrades increased while the share of upgrades decreased. This might be attributed to the shifting risk populations in the wake of educational expansion. Multivariate analyses show that effects of cohorts in the Netherlands are insignificant under control of initial track, indicating that there indeed is no autonomous growth of track mobility, which is not caused by shifting allocation to initial track. It has to be taken into account however, that especially for upgrades in the Netherlands the number of cases is particularly small ($n=54$) and that results therefore are equivocal. Multivariate results for Germany show that track mobility increased in both directions independently from initial track allocation, but that the increase of track mobility started before the structural reform of the educational system.

Hypothesis 3 is corroborated, the quantity of supplements increased considerably in both countries. However, regarding supplements the differences between the countries are small. In both countries we find a sharp increase in supplements for birth cohorts born after 1951, which reaches a peak in the mid-fifties to sixties birth cohorts. The decrease in supplements for the cohorts born after 1960 probably can be attributed to a kind of "saturation": due to the increasing participation in higher secondary tracks, the necessity for supplements decreases over time.

Regarding social selectivity of track mobility, we found strong support for hypothesis 4. Taking into account the selective distribution on initial secondary tracks and the associated probabilities to change tracks, we confirmed that children who cannot reach their parents' level of secondary education on the current track, have a higher probability to upgrade. Downgrade probability however, is largely independent from relative parental education. We did not find support for hypothesis 5. Family effects for up- and downgrades are slightly smaller in the Netherlands than in Germany, but the differences are negligible. Although effect coefficients for changes over time are considerable at least for upgrades in Germany, no significant decrease of family effect for the post-reform-periods could be found. Hypotheses 6 is corroborated by our analyses. The family background effects on supplements indeed are slightly lower in the Netherlands than in Germany, indicating that the lower risk of failure, which is generated by the repetition year, indeed outweighs the opportunity costs of the additional year.

Largely, the differences in the inequality patterns do not seem to be particularly big between the two countries. It is striking however, that both countries established educational reforms which were resembling in their target and implementation, but still produced entirely different results considering the change in quantity of intra-secondary transitions. While Germany reached their target of increasing track-mobility in any respect, in the Netherlands especially the number of upgrades decreased over time. It seems to be worthwhile to discuss in how far creating the opportunity for intra-secondary transitions is a desirable strategy to correct for erratic track allocation during secondary education. It might be argued that this only can be an emergency solution when the educational system fails to ensure that every student is placed in an appropriate track right away. On the other hand, upgrading and supplements give valuable chances to late-bloomers and flexibilizing secondary education opens opportunities for students to create their individual educational pathways. However, being able to control for performance and teacher-recommendation before secondary track placement surely would add to this line of educational research and might be a perspective for future research.

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Figure 2. Secondary tracks after primary school by birthcohort (Germany)

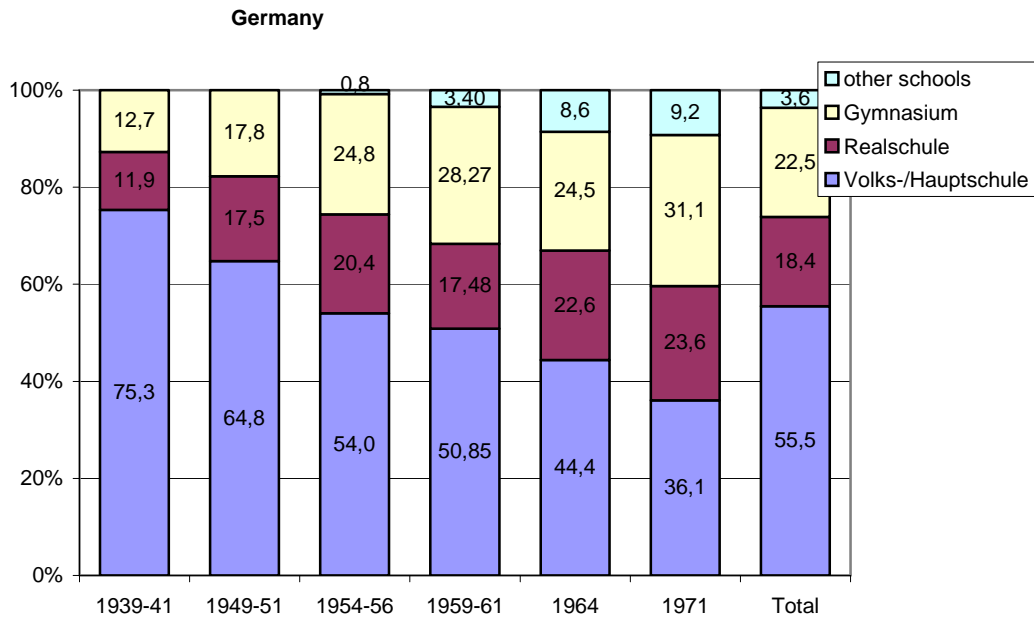


Figure 3. Secondary tracks after primary school by birthcohort (Netherlands)

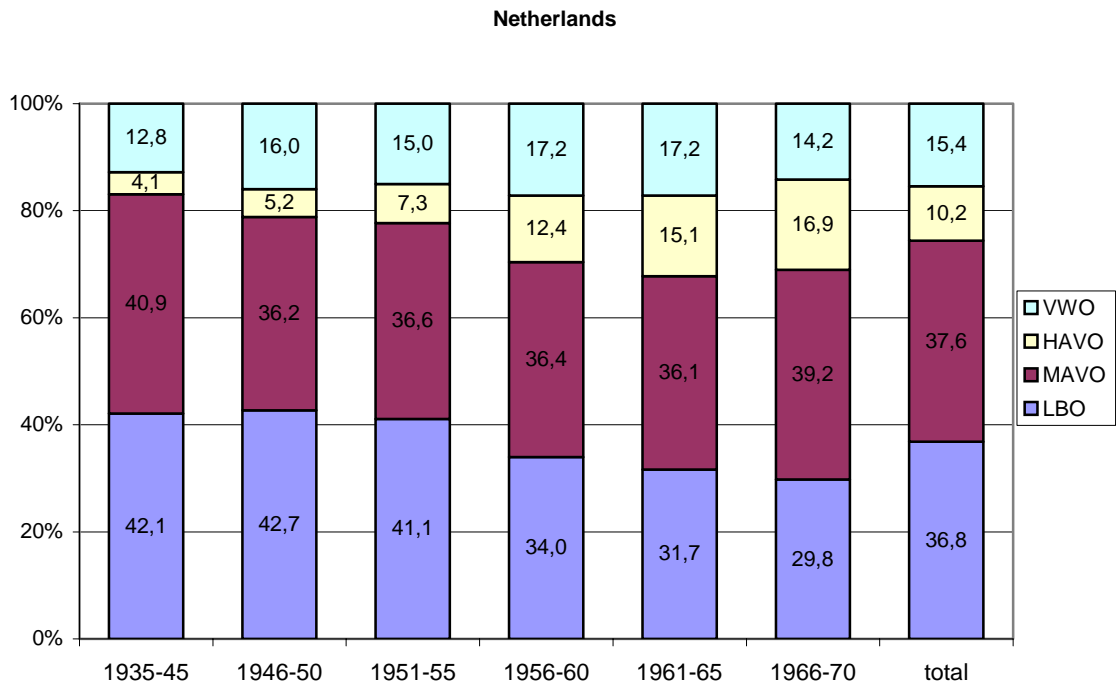


Figure 4 Parent's education and intra-secondary transitions

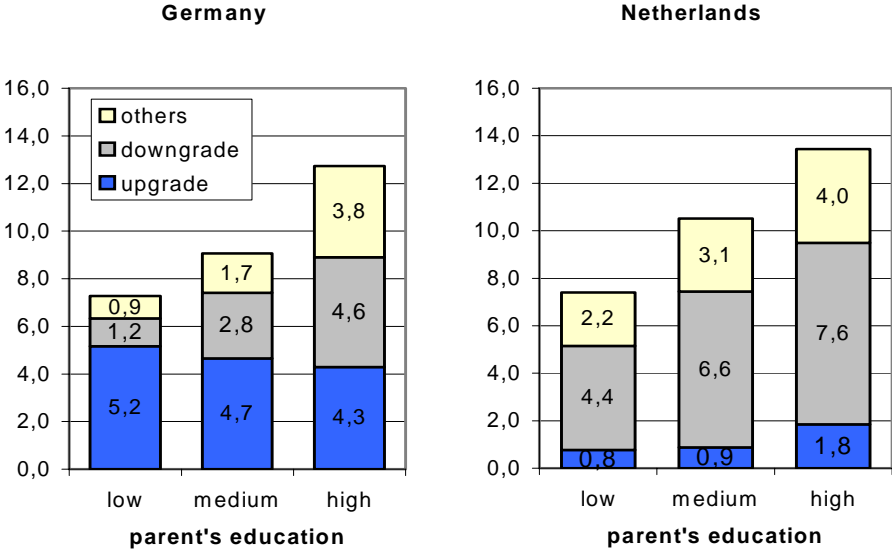


Table 1: Initial track choice after primary education by parent's education, column percent

GERMANY	Parent's education			
	Low	Medium	High	Total
Track				
Hauptschule/Volksschule	77.9	51.4	11.3	50.2
Realschule	12.3	22.3	12.3	20.0
Gymnasium	6.8	22.0	68.1	25.1
Other schools	3.0	4.3	8.3	4.6
Total	100	100	100	100
N	725	4721	649	6095

Table 2: Initial track choice after primary education by parent's education, column percent

NETHERLANDS	Parent's education			
	Low	Medium	High	Total
Track				
LBO	56,1	32,7	7,7	36,4
MAVO	33,1	42,3	29,8	37,8
HAVO	5,4	10,8	18,8	10,3
VWO	5,3	14,2	43,8	15,6
Total	100	100	100	100
N	1703	3072	759	5534

Table 3: Intra-secondary transitions by birthcohort

GERMANY	Transitions		Upgrade		Downgrade	
	N	% of students	N	% of transitions	N	% of transitions
1939-41	26	3,6	17	65,4	8	30,8
1949-51	31	4,2	24	77,4	6	19,4
1954-56	86	8,5	47	54,7	32	37,2
1959-61	94	9,4	46	48,9	32	34,0
1964	163	11,1	66	40,5	56	34,4
1971	163	11,4	75	46,0	42	25,8
Total	563	8,8	275	48,9	176	31,2

Table 4: Intra-secondary transitions by birthcohort

NETHERLANDS	Transitions		Upgrade		Downgrade	
	N	% of students	N	% of transitions	N	% of transitions
1935-45	119	11.3	17	14.2	50	42.0
1946-50	89	10.8	6	6.7	48	53.9
1951-55	80	9.4	10	12.5	47	50.5
1956-60	93	9.0	9	9.6	64	68.8
1961-65	99	9.5	6	6.0	79	79.7
1966-70	75	9.5	6	8.0	47	62.6
Total	555	9.9	54	9.7	335	60.3

Table 5: Supplement rates by birthcohorts

GERMANY				
Cohort	Supplements		Among those: <i>Abitur</i>	
	N	% of students	N	% of supplements
1939-41	31	4.7	8	25,8
1949-51	61	8.4	31	50,8
1954-56	167	18.0	114	68,3
1959-61	145	15.1	80	55,2
1964	127	9.0	72	56,7
1971	152	10.9	98	64,5
Total	686	11.2	403	58,7

Table 6: Supplement rates by birth cohorts

NETHERLANDS				
Cohort	Supplements		Among those: <i>HAVO, VWO</i>	
	N	% of students	N	% of supplements
1935-45	33	3.1	24	72.7
1946-50	27	3.3	19	70.3
1951-55	81	9.5	69	85.2
1956-60	140	13.5	115	82.1
1961-65	137	13.1	110	80.3
1966-70	84	10.6	79	94.0
Total	502	8.9	416	82.9

Table 7: Intra-secondary transitions (multinomial logistic regression model, $\exp(\beta)$), (Germany)

	Model I		Model II		Model III	
	upgrade	downgrade	upgrade	downgrade	upgrade	downgrade
Sex						
Female	1	1	1	1	1	1
Male	0,781*	1,317 ⁺	0,788 ⁺	1,761**	0,791 ⁺	1,761**
Relative parents education						
Same/lower level	1	1	1	1	1	1
Higher	4,404***	0,484	2,968***	0,746	4,328***	0,674
Cohort						
1939-41			1	1	1	1
1949-51			1,517	0,401	1,552	0,401
1954-56			5,557***	26,645***	5,755***	26,773***
1959-61			7,112***	29,724***	7,444***	29,731***
1964			1,974*	1,993 ⁺	2,160*	1,985 ⁺
1971			2,230**	1,228	2,478**	1,222
Initial track						
Gymnasium			~	2,374***	~	2,384
Realschule			1	1	1	1
Hauptschule			0,133***	~	0,135***	~
Other			0,044***	~	0,046***	~
Cohort * relative parents education					0,450 (11%)	1,399
N	4840		4840		4840	
LR χ^2	43,58		1180,33		1183,38	
(df)	(6) ***		(30)***		(33)***	
Pseudo R2	0,0093		0,2514		0,2521	

Level of sign.:+ p<0.10, * p<0.05, **p<0.01, *** p<0.001

~ transition is not possible

Notes: 'No intra-secondary transition or lateral transition' is the base category. The model is estimated using three categories of the dependent variable, the results for transitions that cannot clearly be identified as up- or downgrade (transitions from comprehensive schools to other schools, eg.) are not presented in the table.

Table 8 Supplement graduation (binomial logistic regression model, $\exp(\beta)$), (Germany)

Supplements (GER)	Model I	Model II	Model III
Sex			
Female	1	1	1
Male	1,716***	1,768***	1,769***
Relative parents education			
Same/lower level	1	1	1
Higher	2,473	2,184***	2.235***
Cohort			
1939-41		1	1
1949-51		1.887	1,888+
1954-56		5,417**	5,435***
1959-61		4,364***	4,376***
1964		2,540***	2,556***
1971		3,458***	3,482***
Initial track			
Gymnasium		0,015**** ^a	0,015***
Realschule		1	1
Hauptschule		0,845+	0,846+
Other		1,243	1,240
Cohort * relative parents education			0,951
N	5945	5945	5945
LR χ^2	73,52	575,58	575,60
(df)	(2)***	(10)***	(11)***
Pseudo R2	0,174	0,1363	0,1363

Level of sign.:+ p<0.10, * p<0.05, **p<0.01, *** p<0.001

^a It is possible to leave *Gymnasium* with a vocationally restricted *Abitur* (e.g. *Fachhochschulreife*) degree that can be supplemented by the general *Abitur*

Table 9: Intra-secondary transitions (multinomial logistic regression model, $\exp(\beta)$, (Netherlands))

	Model I		Model II		Model III	
	upgrade	downgrade	upgrade	downgrade	upgrade	downgrade
Sex						
Female	1	1	1	1	1	1
Male	2.000*	1.172	2.126**	1.238 ⁺	2.135**	1.231 ⁺
Relative parents education						
Same/lower level	1	1	1	1	1	1
Higher	3.488***	.834	3.230***	.821	3.636***	.639
Cohort						
1935-45			1	1	1	1
1946-50			.468	1.263	.464	1.272
1951-55			.715	1.113	.706	1.122
1956-60			.523	1.053	.578	1.013
1961-65			.348*	1.272	.386	1.222
1966-70			.429 ⁺	.978	.476	.938
Initial track						
VWO			~	1.320	~	1.422*
HAVO			.303 ⁺	1.426	.306 ⁺	1.318*
MAVO			1	1	1	1
LBO			.313***	~	.315***	~
Cohort * relative parents education					.749	1.478
N	5609		5609		5609	
LR χ^2 (df)	26.775 (6)		502.399 (30)		511.630 (33)	
Pseudo R2	.006		.110		.112	

Level of sign.: + p<0.10, * p<0.05, **p<0.01, *** p<0.001

~ transition is not possible

Table 10: Supplement graduation (binomial logistic regression model, $\exp(\beta)$), (Netherlands)

Supplements (NL)	Model I	Model II	Model III
Sex			
Female	1	1	1
Male	1.010	1.124	1.127
Relative parents education			
Same/lower level	1	1	1
Higher	2.116	1.749***	2.184***
Cohort			
1935-45		1	1
1946-50		1.129	1.120
1951-55		3.512***	3.481***
1956-60		5.363***	5.736***
1961-65		4.997***	5.352***
1966-70		3.686***	3.958***
Initial track			
VWO		~	~
HAVO		.438***	.440***
MAVO		1	1
LBO		.286***	.288***
Cohort * relative parents education			.728
N	5609	5609	5609
LR χ^2 (df)	41.568*** (2)	388.326*** (10)	389.944*** (11)
Pseudo R2	.012	.116	.116

Level of sign.: + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

~ transition is not possible