Horizontal Differentiation Matters: Moderating Influence of the Type of Upper Secondary Education on Students’ Transitions

Pepka Boyadjieva and Petya Ilieva-Trichkova

Institute for the Study of Societies and Knowledge, Bulgarian Academy of Sciences

This article explores how the horizontal differentiation of upper secondary education affects students’ transitions after graduation. It builds upon the institutional perspective on education and draws on data from a nationally representative survey. The analysis shows a considerable variation in graduates’ patterns of transition according to the type of secondary education and that the type of secondary education program moderates the effect of the academic achievement and of students’ socioeconomic background on students’ patterns of transition.

INTRODUCTION

In modern, knowledge-based societies, education has a crucial role for the individual’s life prospects and trajectories. This explains the vast amount of research on how the individual’s educational level affects his or her further educational choices and labor market outcomes (e.g., Jaeger & Page, 1996; Kogan, Noelle, & Gebel, 2011; Verhaest & Omy, 2010). Many studies have analyzed how the vertical stratification of education, that is, the difference in people’s levels of education, influences people’s lives (e.g., Shavit & Müller, 1998; Van der Velden & Wolbers, 2007). Recent research on postsecondary education has devoted greater attention to horizontal stratification in higher education, that is, on how, in the context of educational expansion, the diversification of education affects unequal access to higher education across countries (Shavit, Arum, & Gamoran, 2007), or how occupational outcomes vary according to the different types of degrees individuals have obtained, the types of institutions they have attended, and the field of their specialization (Gerber & Cheung, 2008). The horizontal differentiation within secondary education has also attracted greater attention, especially in relation to social inequality (e.g., Blossfeld et al., 2016; Lucas, 2001). Research interest has focused mainly on the differentiation between general and vocational secondary education (Iannelli & Raffe, 2007; Müller & Shavit, 1998; Raffe, 2014), the levels of stratification of different national educational systems (Allmendinger, 1989;
Kerckhoff, 2001; Shavit & Müller, 1998), and the impact of tracking on social inequality in educational and labor market outcomes (Dustmann, Puhani, & Schönberg, 2014; Maaz et al., 2008; Schindler, 2017). However, in our view, when studying the influence of horizontal differentiation on young people’s pathways, it is necessary to take into account its various dimensions, such as types of institutions, status/prestige of institutions, place of study, and program orientation. Thus, a study carried out within the framework of the eduLIFE project argued for “a more refined concept of upper secondary tracking that distinguishes VET programmes with low and high academic requirements, specialized schools, and baccalaureate schools” (Buchmann et al., 2016).

This article addresses the following research questions: How does the horizontal differentiation of upper secondary education affect students’ transitions after graduation? and Can the type of secondary education moderate the influence of other factors, for example, grades and social background, on those transitions? This analysis uses Bulgaria as a case study. The Bulgarian system of secondary education provides a fruitful basis for the study of our research questions because of its strong internal differentiation, which goes beyond the traditional division into general and vocational education.

The article proceeds as follows. First, we discuss relevant literature and present our theoretical considerations derived from an institutional approach to secondary education. This is followed by a brief overview of the differentiation of Bulgarian upper secondary education and by the formulation of working hypotheses. The data and methods for analysis are then described. We proceed with the identification of the patterns of students’ transition after upper secondary education. Then the empirical results are presented. After that, these results are discussed in the light of previous research, and some directions for future research and policy implications are outlined in the conclusion.

Theoretical Considerations

Each new generation passes through the educational institutions of society and emerges as a stratified student population, whose adult prospects vary significantly according to the credentials they have obtained in those institutions (Kerckhoff, 2001, p. 3). Hence, how education affects individuals and societies is a crucial sociological question. We argue that applying an institutional perspective to upper secondary education provides fruitful ideas for a better conceptualization of the impact of (horizontal) differentiation of upper secondary education on students’ transitions after graduation.

Horizontal Differentiation of Upper Secondary Education from an Institutional Perspective

Understanding education as an institution entails viewing education as a set of formal and informal institutional rules that simultaneously constrain and enable students’ behaviour (Scott, 2001). While acknowledging the socialization effects of education, this perspective stresses that education also functions as an allocating institution, which classifies and allocates individuals to positions in society on the basis, among others, of the types and number of years of education, irrespective of what students have learned in school (Meyer, 1977). Inasmuch as the expansion
of education has made the attainment of upper secondary education an almost general fact, the
differentiating power of education shifts from the mere fact of completion of secondary school
to the type of school completed, which brings to the fore the importance of the structure of
upper secondary education.

There are two different ways of understanding horizontal differentiation, which we designate as
“a flat horizontal differentiation” and “a substantial/qualitative horizontal differentiation.” According
to the first view, horizontal differentiation refers to “institutionally and organizationally
differentiated learning environments, which may be different schools of the same type,
different school types, or different tracks or streams within schools”; however, this differentiation
“has no direct or independent effect on social inequality in educational attainment or at the point of
labor market entry” (Gebel & Noelke, 2011, pp. 34–35). The second perspective pays attention to
qualitative differences between programs and defines horizontal differentiation as “the extent and
form of tracking at the secondary educational level” where tracks “differ greatly in the curricula
and in the odds that students would continue to the tertiary level” (Müller & Shavit, 1998, p. 6).

We share the views that a differentiated education system is not a “flat space” and that
different types of education create uneven educational environments that differ in quality,
status, and prestige. Moreover, the uneven educational spaces have an impact on how students
think about their future and make decisions. That is why we define horizontal differentiation as
the existence of institutionally and organizationally differentiated learning environments for
acquisition of a given educational level, which are structured as different school types and
which differ in curricula, internal rules and ethos, the future prospects they offer to their
students, and prestige. Acknowledging the qualitative dimension of horizontal differentiation
allows us to understand why educational degrees received from different schools can function
as signals during school-to-work transitions.

According to some authors (Gebel & Noelke, 2011, p. 35), a key factor differentiating
programs at secondary level in Central and Eastern European countries is whether or not they
grant access to higher education. Another widely used criterion for differentiation is the content
of the school curriculum. Drawing on human capital theory, educational programs are differen-
tiated according to their degree of orientation to general or specific skills (Becker, 1964) and are
classified as either academic or vocational (Iannelli & Raffe, 2007; Müller & Shavit, 1998).
Vocational programs are further differentiated by the field of study, industry, or occupation
for which they train students (Shavit & Müller, 2000), by the duration of the programs, and
by whether they offer firm-based training or not (Baranowska, 2011). Other studies have
demonstrated that different types of secondary education differ according to the qualification
of their teaching staff (Milenkova, 2009; Sørensen & Morgan, 2000).

Based on our definition of horizontal differentiation and the overview of literature, we
assume there are four main criteria for outlining the internal differentiation/stratification of a
given national secondary education system and for distinguishing different types of secondary
education/schools within it:

1. Access and selection: Who can enter in upper secondary education programmes and
   on what grounds?
2. Program orientation and function: What is the specificity of the educational program
   offered—is it more academic/general or more vocationally oriented, and on what
   field of study is it focused?
3. Teachers’ qualification: What is the level of qualification of teachers in different type of schools?
4. Status: Is education offered in a public or a private school?

**Students’ Transitions after Upper Secondary Education**

There are two main pathways after finishing upper secondary education: to continue education in a higher education institution (HEI) or to enter the labor market. Recently, there has been a growing literature on school-to-work transition—commonly understood as the process of entering a stable job (Kogan, Noelke, & Gebel, 2011; Raffe, 2014). Other studies focus on unemployment, differentiation between finding a significant or a temporary job, the length of time until entry into the first significant job, or the quality of the first significant job (Kogan, Noelke, & Gebel, 2011; Shavit & Müller, 1998, 2000). Most authors test the hypothesis that graduates from upper secondary vocational programs enter the labor market faster and obtain better quality jobs due to the stronger labor market orientation of their education. At the same time, many young people experience problems in navigating their way forward into work or learning and are “not in education, employment or training” (NEETs).

The adopted institutional perspective and our understanding of horizontal differentiation of secondary education allow outlining at least three theoretical reasons why school-leavers who graduated from different types of secondary schools follow different patterns of transition.

1. The effect of the quality of programs and quality of the teaching process: Different types of schools/educational programs differ in the quality of education they offer. Some types of schools/educational programs impart cognitive and/or noncognitive skills more efficiently than others. The greater efficiency in formation of cognitive and/or noncognitive skills could be related to institutional factors, for example, to the quality of teachers.

2. The institution’s socialization effect: Different types of secondary schools have different “charters” and “hidden curriculums,” which have significant effects on formation of students’ identity and future plans and on all the various aspects of the individual’s socialization—intellectual development, social values, identity construction, and status expectations. The so-called “hidden curriculum” involves the implicit and unplanned, invisible messages of educational practices, the influence of which all too often proves stronger and more important than the planned training activities. According to Meyer (1970, p. 568), an educational program not only affects students through its content and way of provision, but “includes effects the organisation has by virtue of its charter in the larger society.” The term “social charter” refers to the agreed definition of the products/outcomes of a given educational program (Meyer, 1970, p. 565). This “charter” has important socializing effects as far as “knowing what one is institutionally designed to become shapes individual perceptions of and practices within school socialisation”

---

1“Lessons” of the “hidden curriculum” are “taught” through the way educational institutions function—their admission procedures, organization of the educational environment and teaching process, and school management (Bourdieu & Passeron, 1977).
In addition, those students who attend more selective types of secondary schools are surrounded by peers with higher average ability than students at less selective schools. This in turn influences their achievements and expectations.

3. The signal effect (in case of school-to-work transitions): Attendance at some types of secondary schools may “signal” ability to employers (Spence, 1973), regardless of whether these schools do in fact impart skills more efficiently than other types of secondary schools.

Brief Overview of Stratification of Bulgarian Upper Secondary Education and Students’ Pathways

Bulgarian upper secondary education is universal (although not compulsory) and highly stratified. The group enrollment rate for upper secondary education for the 2013/2014 school year was about 83%. In addition, students are tracked at the age of 14 years (before the end of their compulsory level of education) into general and vocational schools. A specific feature of the Bulgarian context is that each of these two tracks is further differentiated. Thus, the general track includes the so-called language schools, specialized gymnasiums (e.g., in mathematics, humanities or sciences), and nonprofiled gymnasiums. There are also different types of vocational secondary schools according to their program orientation and access procedures. Nevertheless, in Bulgaria all secondary schools (both general and vocational) grant access to higher education, and there are no dead-end tracks. The Bulgarian educational system has two other institutional features that are worth mentioning here: There is no straightforward vocational linkage between upper-secondary and tertiary educational levels, and there are only weak linkages between the educational system and the labor market (Bieri et al., 2016).

In the stratification aspect, it is important to emphasize that Bulgarian secondary schools differ in their selectivity—access to some is based on entry exams (in mathematics and Bulgarian language) and is very selective, whereas others are open to all students irrespective of their academic achievements. Since the 2009/2010 school year onward, these exams have been carried out as a part/module of the nationwide external evaluation for students in the seventh grade. Thus, the procedure of admission in high schools is transparent and, as a rule, there is no evidence in favor of nepotism in the selection of students for entry into various gymnasiums. However, in general most of the students who gain high grades at the exams actually attend private lessons. Given this, pupils whose parents can afford attending private lessons are most successful and continue their education in selective schools. In turn, the schools’ academic selectivity influences their prestige, the quality of teaching staff, and the quality of education offered. For example, PISA (Program for International Student Assessment) results show a huge and persistent difference in the average performance of pupils from different types of schools with regard to mathematics, reading, and science (World Bank, 2014). Furthermore, it is emphasized that social stratification in Bulgarian schools is, in fact, the highest among European Union countries; the report shows that students from different backgrounds of study have unequal chances to receive quality education.

---

2National Statistical Institute: [http://www.nsi.bg/en/content/4786/net-enrolment-rate-population-educational-system](http://www.nsi.bg/en/content/4786/net-enrolment-rate-population-educational-system).
This brief overview of stratification of Bulgarian upper secondary education justifies applying our theoretical understanding of horizontal stratification to the Bulgarian secondary education system. In order to distinguish different types of upper secondary education, we use two of the defined criteria: (a) access and selection and (b) function and program orientation, that is, whether they are academically selective and the kind of educational program they provide: (non-)profiled, semiprofiled, or vocational. Thus, we identify the following six types of upper secondary education, which define the picture of horizontal stratification of Bulgarian upper secondary education:

1. Nonprofiled nonselective: access with no selection, and a general educational program.
2. Semiprofiled selective: access based on selection, and a general, but partially profiled, educational program.
3. Semiprofiled nonselective: access with no selection, and a general, but partially profiled, educational program.
4. Profiled selective: access based on selection, and an academically oriented profiled educational program.
5. Vocational selective: access based on selection, and a vocationally oriented educational program.
6. Vocational nonselective: access with no selection, and a vocationally oriented educational program.

As concerns students’ patterns of transition, statistical data show that more than 70% of the graduates of secondary schools continue their education in HEIs. The respective percentage is extremely high for the graduates from profiled selective schools—above 95%. During the last decade, a growing number of students tend to combine study in higher education with work: 35% of all students work alongside their studies (Eurostudent, 2008). Another salient problem in the Bulgarian context relates to NEETs. Bulgaria is among the countries with the highest NEET rates in the European Union, both among people aged 15–24 years and among those aged 25–29 years. A survey on NEETs in Bulgaria has shown that 48% of them are graduates of secondary schools and that the percentage of NEETs among the graduates from general upper secondary programs is slightly higher than this percentage among their peers who studied in vocational upper secondary programs (UNICEF, 2015, p. 8, Annex 1). It is worth analyzing whether these differences will be more salient when our differentiation of upper secondary education programs is applied.

In view of the outlined Bulgarian context, and on the basis of three criteria—whether graduates work or continue their education, the type of their employment, and whether they combine studies with some kind of work—we identify five different patterns of transitions after secondary school: (a) temporary employment, (b) significant employment, (c) attending HEI, (d) attending HEI and working in a significant or a temporary employment, and (e) not in

---

3We do not apply the third criterion—teachers’ qualification—because statistical data and studies have shown a high correlation between it and school selectivity (Milenkova, 2009). Due to the limited number of students who graduated from private schools in our sample, 50 cases, we do not use the fourth criterion in our classification.

4“Nonprofiled” refers to general programs. “Profiled” includes language gymnasiums, mathematics and science gymnasiums, and gymnasia in the humanities. “Semiprofiled” includes gymnasia with profiled classes. “Vocational” includes vocational gymnasia after completion of 6/8 class, art, and sports schools.

5See http://dariknews.bg/view_article.php?article_id=1389962.
education or employment. Following Kogan, Noelke, and Gebel (2011), we define significant employment as an employment of minimum 6 months duration and minimum 20 hours per week. These patterns of transitions after upper secondary school are explored empirically below.

Hypotheses

We investigate how the horizontal differentiation/stratification of upper secondary education affects students’ transition after secondary school. With regard to type of secondary school, on the basis of our theoretical considerations, the specific features of Bulgarian secondary education system, and some previous studies (Kogan, Noelke, & Gebel, 2011; Shavit & Müller, 1998, 2000), we expect that graduates’ patterns of transition differ by the type of upper secondary education they have completed (H1).

Numerous studies have shown that factors associated with school performance, such as obtaining good grades for the year, repeating a school year, or needing more than the average number of years to complete a degree, significantly influence labor market outcomes (e.g., being employed or overeducated) (Diem & Wolter, 2014; Verhaest & Omey, 2010). But as already pointed out, we assume that horizontal differentiation is associated with the existence of institutionally and organizationally differentiated learning environments, which not only differ in quality, status, and prestige, but influence how students think about their future and the decisions they make. In line with this reasoning is the observed impact of college selectivity on academic achievement in the United States: It has been ascertained that students who attend more selective institutions may receive lower grades than students with similar abilities attending less competitive institutions. The solution proposed to avoid biased estimates is that both academic achievement and school selectivity be included in models designed to measure either of the two effects (Gerber & Cheung, 2008). Taking into account these considerations, we expect that certain types of upper secondary education moderate the effect of students’ academic achievement on their patterns of transition after leaving secondary school (H2).

The strong impact of social background on children’s educational attainment and transitions to work is well documented for different countries and for different educational levels (Bukodi & Goldthorpe, 2013; Shavit et al., 2007; Stoilova, 2015). However, a recent study has shown that when secondary-level tracking is controlled, the effect of socioeconomic status on tertiary enrollment proves considerably weaker (Buchmann et al., 2016). Given this finding, and leaning on our theoretical considerations, we expect that certain types of secondary education can moderate the effect of social background on students’ transition after leaving secondary school (H3).

Data, Variables, and Method

The data set used in the empirical analysis is from the Bulgarian School-Leavers Survey (BSLS), carried out in the period from May to September 2014 as part of the project “Social

---

6The data from the BSLS are open access and can be downloaded from FORSbase: https://forsbase.unil.ch/project/study-public-overview/14679/2.
Disparities and Regional Differences in School-to-work Transitions in Bulgaria. The survey sample consisted of 2,103 individuals and was nationally representative for Bulgarian residents aged 15–34 years who had left education for the first time in the previous 5 years and for more than 1 year. The survey response rate was about 81%. Given that we study the impact of upper secondary education, we restricted the data to people aged 20–34 years who had graduated upper secondary education and had completed this education during the period from 2001 to 2012. Our initial sample of individuals who have graduated upper secondary education contains 1666 cases. We deleted 38 cases of people who were not aged 20–34 years, 5 cases of people who attended secondary school abroad, and 123 cases for which there was no straightforward information and we were not able to classify them to any of the already-described six patterns. Thus, the sample was reduced to 1,500 cases. In order to obtain the same number of cases over the models, categories for unknown/missing values were omitted from the analysis using listwise deletion. More specifically, 1437 of the 1,500 total cases were complete for every item selected. To test whether the data were missing at random (MAR), we followed Bartlett and Carpenter’s (2013) Missing Data (Stata Practical). We found strong evidence that 63 missing values are MAR—none of the seven variables that we include in our multivariate analysis showed any potentially biased missingness. Thus, the final analytical sample was limited to 1,437 observations.

The dependent variable in our study is the five-category variable for the patterns of students’ transition after secondary education described in the preceding. In the analysis we use the category of people “attending HEI” as a reference category, given that for the period 2001 to 2012 one of the main developments in Bulgarian educational system was the expansion of higher education, and that both students and their parents have regarded attending HEI as the most preferable pattern after graduation. Furthermore, the net enrollment rate for people aged 19–23 years, which is the age at which people typically study in higher education, rose from 25.8% in the 2001/2002 school year to 42.6% in 2011/2012.

The main independent variable in the analysis is the type of secondary education program. As discussed earlier, we distinguish six programs: nonprofiled nonselective, vocational selective, vocational nonselective, semiprofiled nonselective, semiprofiled selective, and profiled selective. We have chosen the nonprofiled nonselective program as a reference category, as it is the most neutral one. The second independent variable is school grade in mathematics upon completion of upper secondary education. In Bulgaria, every university and each course has the right to decide which subjects’ grades to take into consideration in their application and acceptance process. The grades usually taken into account are the grades

---

7This is a joint project of the Institute for the Study of Societies and Knowledge, the Bulgarian Academy of Sciences (BAS), and the Institute of Sociology at the University of Basel, which was supported of the Swiss Enlargement Contribution and by the Bulgarian Ministry of Education and Science in the framework of the Bulgarian–Swiss Research Program (grant 142969).

8A two-stage cluster sample structured by regional planning units (NUTS2) and size of the settlement was employed both for the main and for the booster samples. At the second stage, the addresses of potential respondents provided from the General Directorate “Registration of Citizens and Administrative Support” to the Ministry of the Regional Development and Public Works (GRAO) for each of the selected electoral sections at the first stage were used, as GRAO was requested to select these addresses by random.

9In 2015, about 80% of the graduates of secondary schools continued their education in HEIs. See http://www.bgnes.com/bulgaria/obshchestvo/4388658.

10National Statistical Institute: http://www.nsi.bg/en/content/4786/net-enrolment-rate-population-educational-system.
in mathematics and Bulgarian language. The correlation between these two grades is very strong (Pearson’s $r = .72$, $p < .001$). That is why we used only the grade in mathematics. Furthermore, if we use both of them we will violate the assumption for multicollinearity in regression analysis. Grades range from “three,” which designates satisfactory, to “six,” which indicates excellent performance. The third independent variable is parents’ educational status. We differentiate two groups of people depending on their parents’ educational status: a group of people having no parent with higher education, and a group of people that have at least one parent with higher education. We use the first group as a reference category. To check the robustness of our results, we include a set of control variables: gender (male or female); ethnicity (ethnic Bulgarian, Roma or others); school status (public or private school); and location of the secondary school attended (the capital, a large city, or small town/village). Transition from upper secondary education is modeled using a multinomial logit model, which is appropriate for nominal response outcomes (Long & Freese, 2006). We employed three models to estimate how the type of upper secondary program affects the likelihood of following one of the possible variants of transition after secondary education, but for the sake of simplicity, here we present only the results from the full model. It includes the type of secondary program, the grades, parents’ education status, and the already-mentioned control variables.

Empirical Results

Patterns of Students’ Transition after Secondary Education

In Table 1, we report the distribution of the patterns of students’ transition after upper secondary education.

More specifically, Table 1 shows how these patterns differ by type of secondary programs, gender, parents’ educational status, ethnicity, and location of the secondary school attended. The data indicate that the majority of people who had studied in nonprofiled nonselective programs, vocational selective and nonselective programs, and semiprofiled nonselective programs had a significant employment, whereas the majority of people who had studied in semiprofiled selective and profiled selective schools attended HEI upon completion of secondary school.

School Horizontal Stratification and Students’ Patterns of Transition after Upper Secondary Education (Explanatory Analysis)

Table 2 shows the regression results with patterns of transition after completion of upper secondary education as a dependent variable. The baseline group used for comparison is those “attending HEI.” For each covariate, a coefficient is shown. Full Model estimates show that people who studied in profiled selective schools and in semiprofiled nonselective programs are less likely to be in temporary employment than to attend HEI compared with those who attended nonprofiled nonselective programm, given the other covariates. People who studied in vocational nonselective programs are more likely to start a significant job than to attend HEI compared with their peers who studied in nonprofiled nonselective programs. At the same time, compared with the reference category, people who studied in semiprofiled selective or profiled selective programs are less likely to be in significant employment than to attend
HEI. Finally, yet importantly, people who studied in semiprofiled selective or profiled selective programs are less likely to be neither in employment nor in education than to attend HEI compared with their peers who studied in nonprofiled nonselective programs. These results indicate that the type of secondary program has a significant influence on the transition patterns, given the other covariates, and it diverts graduates to one of the possible patterns. The estimates also show that higher grades decrease the likelihood of having a temporary or significant job and to be neither in employment nor in education, and increase the likelihood of people to be attending HEI and working in a significant or a temporary employment.

The full model estimates show that parents’ educational status has a significant effect on the likelihood of people pursuing a certain pattern upon completion of secondary school, given the variables in the model are held constant. More specifically, upper secondary graduates who

| Outcome/Variables | Description | Temporary employment | Significant employment | Attending HEI | Attending HEI and working | Not in education and employment |
|-------------------|-------------|----------------------|-----------------------|--------------|--------------------------|-------------------------------|
| **Independent variables** | | | | | | |
| Type of secondary programme | Base: Non-profiled non-selective | 7.69 | 40.05 | 29.71 | 9.81 | 12.73 |
| | Vocational non-selective | 9.79 | 51.32 | 18.52 | 5.56 | 14.81 |
| | Vocational selective | 4.00 | 35.50 | 33.50 | 17.50 | 9.50 |
| | Semi-profiled non-selective | 3.92 | 36.60 | 33.99 | 13.07 | 12.42 |
| | Semi-profiled selective | 5.22 | 20.00 | 53.04 | 18.26 | 3.48 |
| | Profiled selective | 1.87 | 6.07 | 67.29 | 22.90 | 1.87 |
| Parents’ education status | Base: None of the parents with HE | 7.99 | 42.76 | 28.17 | 8.19 | 12.89 |
| | At least one parent with HE | 2.29 | 18.35 | 51.38 | 23.17 | 4.82 |
| Grades Maths | Satisfactory | 15.22 | 49.28 | 12.32 | 2.17 | 21.01 |
| | Good | 9.51 | 52.62 | 18.06 | 4.85 | 14.95 |
| | Very good | 3.63 | 29.49 | 44.44 | 14.74 | 7.69 |
| | Excellent | 0.95 | 9.81 | 59.49 | 27.22 | 2.53 |
| **Control variables** | | | | | | |
| Gender | Base: Men | 8.32 | 39.02 | 31.99 | 10.04 | 10.62 |
| | Women | 4.32 | 31.89 | 38.24 | 15.27 | 10.27 |
| Ethnic background | Base: Ethnic Bulgarian | 5.18 | 35.04 | 38.18 | 13.83 | 7.78 |
| | Roma | 21.13 | 28.17 | 4.23 | 1.41 | 45.07 |
| | Others | 9.68 | 45.16 | 18.28 | 6.45 | 20.43 |
| Location of secondary school | Base: Capital | 4.78 | 36.25 | 39.44 | 15.14 | 4.38 |
| | Big city | 5.74 | 31.76 | 38.38 | 15.44 | 8.68 |
| | Small city or village | 7.71 | 39.72 | 28.85 | 7.91 | 15.81 |
| Status | Base: Public | 5.90 | 35.95 | 35.08 | 13.01 | 10.06 |
| | Private | 17.39 | 17.39 | 39.13 | 4.35 | 21.74 |

*Data source: BSLS (2014, own calculations, unweighted data). no. 1,437.*
have at least one parent with higher education are less likely to start temporary or significant employment or to be neither in employment nor in education, and are more likely to attend HEI and also work, compared with their peers who have no parent with a tertiary degree. Yet although the multinomial logit model gives us insights about the significant effects on different variables, it does not give us sufficient information about the magnitude of these effects. That is why we continue the analysis by using the average marginal effects.

Data source: BSLS (2014, own calculations, unweighted data). no. 1,437.
Note: Control variables included: gender, ethnicity, school status; location of the secondary school attended.
Standard error in parentheses. Significance: +p < 0.10, *p < 0.05, **p < 0.01.
LRtest(52) - 731.67**, Nagelkerke R2 - 0.399.

Can Certain Types of Secondary Education Moderate the Effect of Students’ Academic Achievement on Their Patterns of Transition after Leaving Secondary School?

In order to answer this question, we estimated the average marginal effects for graduates who had studied in different types of secondary programs and who had obtained different grades upon completion. These effects simply demonstrate the difference between the predictive probabilities of a given program for a given grade and the reference category, which in our case is a nonprofiled nonselective program. These estimates are derived from the already discussed multinomial logit regression model. They are presented in a graphical form to facilitate the interpretation for all four grades and refer only to the most common patterns: significant employment and attending HEI,11 which are followed, respectively, by 35.35% and 35.21% of all upper secondary school graduates.

Figures 1a and 1b show that, for all four grades considered, graduates from a profiled selective program have significantly lower probabilities to start significant employment than

11The average marginal effects for the other four patterns are available on request.
graduates from a nonselective nonprofiled program. On average, graduation from a vocational nonselective program increases the probability of having significant employment by approximately 9 percentage points for grade three, 11 percentage points for grades four and five, and 8 percentage points for grade six, whereas graduation from a profiled selective program decreases this probability by approximately 26 percentage points for grade three, 29 percentage points for grade four, 24 percentage points for grade five, and 13 percentage points for grade six. In the case of the semiprofiled selective program, this probability is significantly lower only for grades five and six, where the decrease is respectively by 11 percentage points and by 7 percentage points on average. The results of margins also indicate that there is no significant difference in the effect of graduation from vocational selective and semiprofiled nonselective programs compared with the effect of nonselective nonprofiled program on the probability of having a significant employment, regardless of the grade received upon completion of secondary school.

As regards the pattern of attending HEI, we found that people who studied in a vocational nonselective program are significantly less likely to attend HEI compared with those who studied in a nonprofiled nonselective program—this was true for all school grades considered except grade six. Thus, we may be 95% confident that the true decrease in the probability of a person who has a final grade of three of attending HEI, associated with him or her graduating a nonselective vocational program, is between −0.002 and −0.06. This decrease is between
0.006 and —0.12 for grade four and between —0.001 and —0.16 for grade five. At the same time, the margins show that those who studied in a profiled selective program are more likely to continue their studies at a higher level for all grades considered. The average difference in the probability of attending HEI between graduates from a profiled selective program and a non-selective nonprofiled program was around 24 percentage points for grade three, 33 percentage points for grade four, 29 percentage points for grade five, and 20 percentage points for grade six. Margins show that there is also a positive effect on attending HEI among people who studied in semiprofiled selective program. However, this effect is lower than that observed in the case of the profiled selective programs. The average difference in the probability of attending HEI between graduates from a semiprofiled selective program and a non-selective nonprofiled program was around 8 percentage points for grade three, 13 percentage points for grade four, 14 percentage points for grade five, and 10 percentage points for grade six. As in the case of significant employment, the results of margins also indicate no significant difference between the effect of graduation from a vocational selective and from a semiprofiled nonselective program, when compared with the effect of a nonselective nonprofiled program, as regards the probability of attending HEI, regardless of the grade received upon completion of secondary school.

Overall, these results show the importance of the type of secondary program, which moderates the relationship between grades and the patterns after leaving upper secondary education and has an influence on the graduates’ transitions.

Can Certain Types of Secondary Education Moderate the Effect of Social Background on Students’ Transition after Leaving Secondary School?

Figures 2a and 2b show the average marginal effects only for upper secondary graduates whose parents have a low education status. The estimates show that graduates who studied in vocational nonselective schools had a significantly higher probability (by 11 percentage points on average) to be in a significant job than people who studied in a nonprofiled nonselective program.

As regards the probability of people of low social origin to be in a significant job, the estimates show no statistically significant differences between those who studied in a vocational selective and a semiprofiled nonselective school, and the people with the same educational background who studied in a nonprofiled selective program. By contrast, people who studied in a semiprofiled selective or in a profiled selective program have significantly lower probabilities of being in a significant job compared with people who studied in a nonprofiled nonselective program. In the case of profiled selective schools, this probability is, on the average, approximately 25 percentage points lower, whereas in the case of semiprofiled selective schools, it is about 10 percentage points lower.

In the case of people attending HEI, we observe a negative effect of the vocational non-selective and no effect of the vocational selective and semiprofiled nonselective types on this pattern, whereas the estimates indicate a positive effect of the semiprofiled selective and the profiled selective program as regards the degree to which people follow this pattern. The difference in the probability of attending HEI between people with a low parental education background who studied in a semiprofiled program and a profiled program and those with the
DISCUSSION

This study demonstrates that in order to understand students’ patterns of transition after leaving secondary school, it is essential that the horizontal differentiation of secondary education be taken into consideration. The empirical evidence enabled us to corroborate most of our hypotheses. More specifically, we found that:

- Graduates’ patterns of transition after completion of secondary education differ according to the type of upper secondary education they have completed (H1). The results show that a higher proportion of graduates from vocationally nonselective programs start a significant job after finishing secondary education, compared with graduates from the nonprofiled nonselective program. The analysis also reveals that a higher proportion of graduates from selective secondary educational programs...
continue their studies in HEIs than graduates from nonselective educational programs, irrespective of their program orientation.

- We also observed that certain types of upper secondary education can moderate the effect of students’ academic achievement on two of the patterns of transition after leaving secondary school (H2): significant employment and attending HEI. Thus, graduates with a given school grade attained in profiled selective schools have a significantly higher probability to continue their studies and a lower probability to start significant employment than those with the same grade who studied in a nonselective nonprofiled program. The same is also evident in the case of the semiprofiled selective program, although to a lesser degree. However, in the case of school leavers who graduated vocational selective secondary programs and semiprofiled programs, there are no differences as to the probability of attending HEI or having a significant job, compared with graduates from nonselective and nonprofiled programs, regardless of the grade they obtained at completion of secondary school. By contrast, graduation from a vocational nonselective program increases the probability of having significant employment for all grades and decreases the probability of attending HEI compared with those who studied in a nonprofiled nonselective program for all school grades considered except grade six.

- Overall, the analysis confirms that some types of upper secondary education moderate the effect of social background on students’ transition after leaving secondary school (H3). More specifically, students from families with low parents’ education status, and who graduated from the more selective type of secondary schools, are more likely to attend HEIs and less likely to start significant employment than graduates with the same family background but who graduated from nonselective and nonprofiled secondary educational programs.

Thus, the results obtained demonstrate that the division of upper secondary education into general versus vocational education is not sufficient for analysis of students’ patterns after completion of upper secondary education in stratified secondary-education systems such as the Bulgarian one. The study provides evidence for the importance of another division—that between selective and nonselective programs. Further differentiation of vocational programs has been found useful for the analysis of school-to-work transitions in Poland (Baranowska, 2011). In addition, our study shows that upper secondary education programs can be further differentiated into nonprofiled, semiprofiled, and profiled.

The findings in this article suggest several directions for future research. A very important question concerns how the effects on student’s patterns of transition are brought about, that is, what the mechanisms are by which different schools influence their students. The theoretical reasoning presented in the preceding suggests that schools have an impact on their students by influencing not only the students’ cognitive achievements but also their identity formation and status/future expectations. This effect of different schools accounts for some of our results, which are at first glance hard to explain. Thus, our finding related to H3 could be explained by two lines of reasoning that have been outlined in the theoretical section: first, as showing the difference in quality of education in different types of secondary education, and second, as pointing to the socializing effect of environments created by different types of secondary education. At the level of the individual, the influence of the type of secondary education is
associated with the effects that entering a prestigious secondary school can have on identity formation. Thus, graduates from profiled selective and semiprofiled selective schools most probably have greater self-confidence and expectations/aspirations toward tertiary studies than graduates from nonprofiled nonselective schools. Hence, when students who study in profiled selective and nonprofiled nonselective schools have the same level of academic achievement, those in the first group are more likely to continue their education in HEI. It is without doubt that one’s decision to continue one’s education in HEIs touches upon issues such as the financial status of the family and accessibility of HEIs. Although these issues are outside of the scope of this article, it is important to emphasize that the fees in the public universities in Bulgaria are not so high (between 200 and 400 euros per year, which is below the average salary in the country) and there is a possibility to work while studying. In addition, the social background of parents, which is included in our analyses, can be used also as an indicator of the financial status of the family.

Further research may be conducted to obtain and analyze longitudinal data on students’ patterns after leaving upper secondary education, thus checking the persistence of our results. Also, the use of longitudinal data will allow studying the influence of institutional differentiation and stratification on youth trajectories over a longer transition period, instead of at a single move from school to work or to HEI.

The analysis uses as a case study Bulgaria, a country that started its transition to a market economy in the early 1990s. Müller and Shavit (1998) have shown that horizontal differentiation is important in explaining variation in labor market entry patterns of secondary graduates across advanced countries. It is worth carrying out a comparative analysis on how the influence of horizontal differentiation within secondary education on students’ transitions after graduation is embedded in different socioeconomic contexts and welfare regimes.

CONCLUSION

This article contributes to the literature and discussions on youth transitions after secondary school by applying a theoretical framework based on the institutional perspective to secondary education. It also enriches the discussions on horizontal differentiation within upper secondary education and on the effect of tracking on students transitions by revealing how different types of secondary education affect pupils’ transitions after leaving secondary school in Bulgaria and how they moderate the influence of other factors on those transitions. The analysis clearly demonstrates that taking into account a more sophisticated view on school differentiation would be useful for explaining the variation in the patterns of students’ transitions after leaving secondary education.

Studying horizontal stratification of secondary education is very important in a policy perspective as well, due to the impact stratification has on inequality (Lucas, 2001; Straková, 2015). Since upper secondary education has become practically universal, its internal differentiation has gained additional significance as a factor of reproduction of social inequalities. This again raises a question as to the age at which students are allocated to different educational tracks/programs and the selection criteria. Research has shown that early student selection has a negative impact on students assigned to lower tracks and exacerbates inequalities without
raising average performance (Organization for Economic Cooperation and Development [OECD], 2012). The findings of this article clearly demonstrate that all policy reforms should be discussed in taking into account their consequences for horizontal differentiation and stratification of secondary education.

ACKNOWLEDGMENTS

We thank the two anonymous reviewers for their valuable comments on an earlier version of this article.

AUTHOR BIOS

Pepka Boyadjieva is a professor at the Institute for the Study of Societies and Knowledge at Bulgarian Academy of Sciences and honorary professor of sociology of education at the University of Nottingham. Her research focuses on higher education, university development, educational inequalities, lifelong learning, and university/school to work transitions.

Petya Ilieva-Trichkova is an assistant professor at the Institute for the Study of Societies and Knowledge at the Bulgarian Academy of Sciences. She holds a PhD from the Adam Mickiewicz University in Poznan, Poland. Her research interests include educational inequalities, social justice, higher education, adult education, and graduate employability.

FUNDING

This research was undertaken within the ENLIVEN project, and received funding from the European Union (EU), Horizon 2020 research and innovation program under grant agreement 693989.

ORCID

Pepka Boyadjieva http://orcid.org/0000-0002-0561-6942
Petya Ilieva-Trichkova http://orcid.org/0000-0002-2889-0047

REFERENCES

Allmendinger, J. (1989). Educational systems and labour market outcomes. Educational Sociological Review, 5(3), 231–250. doi:10.1093/oxfordjournals.esr.a036524.

Baranowska, A. (2011). Does horizontal differentiation make any difference? Heterogeneity of educational degrees and labor market entry in Poland. In I. Kogan, C. Noelke, & M. Gebel (Eds.), Making the transition: Education and labour market entry in Central and Eastern Europe (pp. 216–239). Stanford, CA: Stanford University Press.

Bartlett, J. & Carpenter, J. (2013). Module 14: Missing data (Stata practical). LEMMA VLE. [Teaching resource] Centre for Multilevel Modelling Retrieved from http://www.bristol.ac.uk/cmm/learning/online-course/index.html.

Becker, G. (1964). Human capital (2nd ed.). New York, NY: Columbia University Press.
Bieri, F., Imdorf, Ch., Stoilova, R., & Boyadjieva, P. (2016). The Bulgarian educational system and gender segregation in the labour market. *European Societies, 18*(2), 158–179. doi:10.1080/14616696.2016.1141305.

Blossfeld, H.-P., Buchholz, S., Skopek, J. & Triventi, M. (Eds.). (2016). *Models of secondary education and social inequality. An international comparison*. Cheltenham, UK: Edward Elgar.

Bourdieu, P., & Passeron, J. C. (1977). *Reproduction in education, society and culture*. London, UK: Sage.

Buchmann, M., Kriesi, I., Koomen, M., Imdorf, Ch., & Basler, A. (2016). Differentiation in secondary education and inequality in educational opportunities: The case of Switzerland. In H. P. Blossfeld, S. Buchholz, J. Skopek, & M. Triventi (Eds.), *Models of secondary education and social inequality. An international comparison* (pp. 111–128). Cheltenham, UK: Edward Elgar.

Bukodi, E., & Goldthorpe, J. (2013). Decomposing ‘social origins’: The effects of parents’ class, status, and education on the educational attainment of their children. *European Sociological Review, 29*(5), 1024–1039. doi:10.1093/esr/jcs079.

Diem, A., & Wolter, St. (2014). Overeducation among Swiss university graduates: Determinants and consequences. *Journal of Labour Market Research, 47*, 313–328. doi:10.1007/s12651-014-0164-3.

Dustmann, Ch., Puhani, P., & Schönberg, U. (2014). The long-term effects of early track choice. IZA discussion paper no. 7897. January 2014. Retrieved from: http://ftp.iza.org/dp7897.pdf

Eurostudent (2008). *Social and economic conditions of student life in Europe. Synopsis of indicators. Final report. Eurostudent III 2005–2008*. Bielefeld, Germany: W. Bertelsmann Verlag.

Gebel, M., & Noelke, C. (2011). The transition from school to work in Central and Eastern Europe. Theory and methodology. In I. Kogan, C. Noelke, & M. Gebel (Eds.), *Making the transition: Education and labour market entry in Central and Eastern Europe* (pp. 29–57). Stanford, CA: Stanford University Press.

Gerber, Th., & Cheung, S. Y. (2008). Horizontal stratification in post-secondary education: Forms, explanations, and implications. *Annual Review of Sociology, 34*, 299–318. doi:10.1146/annurev.soc.34.040507.134604.

Hebler, J. (2012). *Taking steps. Formal adult education in private and organisational life: A comparative view*. Wien, Germany: Lit Verlag.

Iannelli, C., & Raffe, D. (2007). Vocational upper-secondary education and the transition from school. *European Sociological Review, 23*(1), 49–63. doi:10.1093/esr/jcl019.

Jaeger, D., & Page, M. (1996). Degrees matter: New evidence on sheepskin effects in the returns to education. *Review of Economics and Statistics, 78*, 733–740.

Kerckhoff, A. C. (2001). Education and social stratification processes in comparative perspective. *Sociology of Education, 74*, 3–18. doi:10.2307/2673250.

Kogan, I., Noelke, C., & Gebel, M. (Eds.). (2011). *Making the transition: Education and labour market entry in Central and Eastern Europe*. Stanford, CA: Stanford University Press.

Lucas, S. R. (2001). Effectively maintained inequality: Education transitions, track mobility, and social background effects. *American Journal of Sociology, 106*(6), 1642–1690. doi:10.1086/321300.

Long, J. S., & Freese, J. (2006). *Regression models for categorical dependent variables using Stata*. College Station, TX: Stata Press.

Maaz, K., Trautwein, U., Lüdtke, O., & Baumert, J. (2008). Educational transitions and differential learning environments: How explicit between-school tracking contributes to social inequality in educational outcomes. *Child Development Perspectives, 2*(2), 99–106. doi:10.1111/j.1750-8606.2008.00048.x.

Meyer, J. W. (1970). The charter: Conditions of diffuse socialization in schools. In W. R. Scott (Ed.), *Social processes and social structures* (pp. 564–578). New York, NY: Holt, Rinehart, and Winston.

Meyer, J. W. (1977). The effects of education as an institution. *American Journal of Sociology, 83*(1), 55–77. doi:10.1086/225606.

Milenkova, V. (2009). Българското училище във фокуса на неравенствата [The Bulgarian school in the focus of inequalities]. Sofia, Bulgaria: Prof. M. Drinov Publishing House.

Müller, W., & Shavit, Y. (1998). The institutional embeddedness of the stratification process. In Y. Shavit & W. Müller (Eds.), *From school to work: A comparative study of educational qualifications and occupational destinations* (pp. 1–48). Oxford, UK: Clarendon Press.

Organization for Economic Cooperation and Development. (2012). *Equity and quality in education: Supporting disadvantaged students and schools*. Paris, France: OECD Publishing.

Raffe, D. (2014). Explaining national differences in education–work transitions. *European Societies, 16*(2), 175–193. doi:10.1080/14616696.2013.821619.
Schindler, S. (2017). School tracking, educational mobility and inequality in German secondary education: developments across cohorts. *European Societies* 19(1), 28–48. doi:10.1080/14616696.2016.1226373.

Scott, W. (2001). *Institutions and organizations* (2nd ed.). Thousand Oaks, CA: Sage.

Shavit, Y., & Müller, W. (Eds.) (1998). *From school to work: A comparative study of educational qualifications and occupational destinations*. Oxford, UK: Clarendon Press.

Shavit, Y., & Müller, W. (2000). Vocational education: When diversion and when safety net? *European Societies*, 2(1), 29–50.

Shavit, Y., Arum, R. & Gamoran, A. (Eds.). (2007). *Stratification in higher education. A comparative study*. Stanford, CA: Stanford University Press.

Sørensen, A. B., & Morgan, S. L. (2000). School effects: Theoretical and methodological issues. In M. T. Hallinan (Ed.), *Handbook of the sociology of education* (pp. 137–160). New York, NY: Kluwer/Plenum.

Spence, M. (1973). Job market signaling. *Quarterly Journal of Economics*, 87(3), 355–374. doi:10.2307/1882010.

Stoilova, R. (2015). Социален произход и образователни възможности [Social origin and educational opportunities]. In R. Stoilova, K. Petkova, & S. Koleva (Eds.), *Knowledge as a value, scientific knowledge as a vocation* (pp. 123–144). Sofia, Bulgaria: East–West Publishing House.

Straková, J. (2015). Strong vocational education – a safe way to the labour market? A case study of the Czech Republic. *Educational Research*, 57(2), 168–181. doi:10.1080/00131881.2015.1030853.

UNICEF. (2015). *Assessment of the state of the art and analysis of the profile of young people who are not in education, employment and training*. Sofia, Bulgaria: UNICEF.

Van der Velden, R. K. W., & Wolbers, M. H. J. (2007). How much does education matter and why? The effects of education on socio-economic outcomes among school-leavers in the Netherlands. *European Sociological Review*, 23, 65–80. doi:10.1093/esr/jcl020.

Verhaest, D., & Omey, E. (2010). The determinants of overeducation: Different measures, different outcomes? *International Journal of Manpower*, 31, 608–625. doi:10.1108/01437721011073337.

World Bank (2014). *How can Bulgaria improve its education system? An analysis of PISA 2012 and past results*. Retrieved from [http://documents.worldbank.org/curated/en/2012/09/20278281/can-bulgaria-improve-education-system-analysis-pisa-2012-past-results](http://documents.worldbank.org/curated/en/2012/09/20278281/can-bulgaria-improve-education-system-analysis-pisa-2012-past-results)