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# Regional and Ethnic Disparities of School-to-Work Transitions in Bulgaria

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**Abstract:** Bulgaria's educational and economic landscapes are marked by substantial regional disparities that are interlaced with ethnic inequalities in school-to-work transitions. Young adults from Roma and Turkish origins particularly suffer from disadvantages with respect to education and labour market participation. We ask how ethnicity affects labour market entry in Bulgaria once educational resources of different ethnic groups are accounted for, and how regional contexts impact ethnic disparities in employment insecurities. Building on comparative school-to-work transition (STWT) concepts and on the labour queueing approach, we assume that ethnic disparities in the STWTs of youths in Bulgaria depend on the degree of urbanisation and the strength and structure of the regional economy. The study draws on data from the Bulgarian School Leaver Survey 2014 of 2103 young adults who had left education in the five years preceding the survey. Descriptive analysis and multilevel logistic regression models were applied to analyse STWT patterns with a special focus on education, regional contexts, and ethnicity. The results highlight that STWT risks differ considerably across the Bulgarian regions. The strength of the local economy thereby moderates ethnic disparities. Young people from Roma and Turkish origins are much less disadvantaged to transition towards employment compared to ethnic Bulgarians the stronger the local economy gets. Our study has several policy implications. In addition to the development of public and private employment opportunities for disadvantaged young people, special attention should also be paid to the development of quality vocational education at the national and regional level.

**Keywords:** regional disparities; school-to-work transition; ethnicity; Bulgaria

## 1. Introduction

During the last two decades, manifold studies have focused on job insecurity and labour market integration of young people in European countries [1–6]. Emphasis is placed on the factors that influence unemployment, finding a significant or temporary job, the length of time until entry into the first significant job, or the quality of the first significant job. International comparative research has shown that different characteristics of the educational system influence the labour market integration of young people along various axes, such as different levels of educational attainment, the general education versus vocational education and training (VET) split, the distinction between school-based versus company-based training, or the flexibility of pathways [2,3,5].

Whereas comparative research on how education impacts labour market access at national levels is vast regional intra-country disparities of school-to-work transitions have received only little attention. To fill this gap, we focus our attention on regional and ethnic disparities in school-to-work transitions of young people in Bulgaria which provides an interesting case for various reasons.

First, Bulgaria is a country marked by substantial regional differences in terms of educational levels and early school leavers [7]. Its educational and economic landscapes are equally marked by regional disparities. Students from 4th, 7th, and 12th grades scored differently in the 2018 nationwide examinations across the 28 Bulgarian districts, with test results being linked to average income, types of schools, and ethnic composition in the regions [8]. Higher education is a significant advantage for accessing stable jobs in Bulgaria and the educational level of the rural population continues to lag substantially in comparison to urban residents despite an increase in the number of persons with secondary education in all the regions [7]. One of the main constraints is the limited access to a choice in education beyond primary school and higher education, due to the distance of schools and missing higher education institutions, which are mostly found in bigger towns and cities [9,10].

Second, despite the fact that vocational education and training (VET) is an important feature of upper secondary education in Bulgaria, it concentrates on school-based rather than workplace-based learning [11–13]. The linkage between the educational system and the labour market is relatively loose, giving room for ascriptive school-to-work transition (STWT) mechanisms, and Bulgaria's youth unemployment rate has been relatively high in the past [14,15].

Third, there are concerns around the high prevalence of employment insecurity among young adults in the Bulgarian liberal market economy, in general, and for ethnic Roma and Turks, in particular [16,17]. The lower educational status of the rural population along with the limited opportunities for economic activity account for higher unemployment rates in the countryside. Young ethnic Turks and Roma, who tend to live in rural areas where the provision and quality of education is generally lower, especially suffer from educational disadvantage at labour market entry [18–20].

Hence, the educational disparities are mirrored by different regional degrees of urbanisation, economic prosperity, and structural labour market differences. The first aim of our paper is to analyse STWT in such differing regional contexts of Bulgaria. These regional differences may be interlaced with ethnic inequalities in STWT. Youth and young adults, especially from the Roma community, are well known to suffer significant disadvantages with respect to their educational attainment and participation in the labour market. However, whereas educational and economic disparities in Bulgaria between rural and urban areas, as well as between the Bulgarian regions, are well documented, little is known about how regional contexts impact ethnic disparities in STWT. The second aim of our paper, therefore, is to analyse, in greater depth, how regional labour market opportunities matter for STWT of young people of different—Bulgarian, Roma, and Turkish—ethnic origin, who have left formal education.

In brief, this study analyses STWT of young people in Bulgaria with a special focus on regional and ethnic disparities. More specifically, we ask how ethnicity matters for STWT in Bulgaria, taking into account their educational resources, and how regional contexts impact ethnic disparities in employment insecurities at labour market entry. Conceptionally, we locate the case of Bulgaria in the 'organisational space' of the education–employment relation [21] which is characterized by a lack of clear vocational qualification signals to employers. We go beyond previous insights of international comparative STWT literature by exploring transitions from education towards (un)employment in varying regional contexts with regard to the degree of urbanisation, labour market competition, and the importance of economic sectors. We assume that regional patterns of STWT are intertwined with ethnic disparities. The study draws on data from the Bulgarian School Leaver Survey 2014 of 2103 residents who have left education in the five years preceding the survey. We take horizontal differentiation at the upper secondary level into account and apply multilevel logistic regression modelling. Finally, STWT patterns are analysed with regard to self-reported ethnic belonging.

The article proceeds as follows. Section 2 describes regional and ethnic disparities in education and work in Bulgaria. In Section 3, STWT in Bulgaria and the respective ethnic

disparities are conceptualised both at the national level and from a regional perspective. Section 4 describes the methodology of the empirical analysis, including the data source, variables, methods used, and analysis strategy. Section 5 presents the descriptive and multivariate findings. Section 6 discusses the results and concludes.

## 2. Regional and Ethnic Disparities in Education and Work in Bulgaria

To contextualise the impact of education on labour market entry in different Bulgarian regions, this chapter presents a short account of the Bulgarian education system and labour market for school leavers; regional patterns of education and work; and ethnic disparities in education and early employment with a focus on ethnic Bulgarians, Turks, and Roma.

### 2.1. Education and Labour Market Entry

Bulgaria's education system combines features from its communist past with some new developments, as is the case with other Central and Eastern European countries [22]. The enrolment rate for the highly stratified upper secondary education for the 2013/2014 school year was about 83% [23]. Students are tracked into general and vocational schools at the age of 14 years. The share of students with a general upper secondary education was 46% in 2014 [24], whereas the vocational education system accommodated 54% of the students [11,12,25]. The relatively wide range of vocational education—a heritage of Bulgaria's communist past when vocational education was part of the planned economy—is mainly offered in vocational schools after the relation with enterprises were eliminated in the aftermath of state socialism. There are different types of vocational secondary schools according to their program orientation and access procedures, and the majority of vocational education graduates receive an upper secondary education diploma which allows for higher education entry [11]. General education includes selective tracks such as so-called language schools, as well as specialised schools, i.e., profiled gymnasiums (e.g., in mathematics, humanities, or sciences) and non-profiled gymnasiums [23].

Higher education consists of public and private universities, specialised universities, higher education institutions, as well as vocational colleges [26]. Access to higher education institutions is regulated based on results from national exams after secondary education and is regulated by university entrance examinations for a few specialties [27]. Enrolment in higher education has considerably increased (from 183,453 to 287,086) within two decades, from 1990 to 2010. [26], and the rate of adults aged 30–34 with higher education has increased from 24.9% in 2005 to 30.9% in 2014 [28]. Today, Bulgaria has a relatively high rate of tertiary education attainment, with more than 70% of secondary school graduates continuing their education at a higher level. The respective percentage is especially pronounced (above 95%) for the graduates from profiled selective schools [23].

A particular institutional feature of the Bulgarian educational system is its weak linkage with the labour market. The development of VET standards in Bulgaria is only recent (since 2015, see [13]), and vocational schools respond slowly to labour market changes. Despite the extensive list of VET professions in Bulgaria comprising some 230 vocational programs, training content and many higher education programs are rather loosely linked to modern job requirements, and they do not always satisfy market demands [25,29]. The mismatch between labour demands and qualification offered by the education system has been identified as a key reason for the relatively high youth unemployment rates in Bulgaria [14,15] which amounted to 20.3% in 2015 [28]. This figure is reflected by a relatively high rate of 18.2% of 15- to 24-year-olds who have neither studied nor worked (NEET) in 2016. The relatively high NEET rate does, however, not solely result from outdated VET programs. A survey on NEETs in Bulgaria has shown that 48% of them are graduates of secondary schools, especially from general upper secondary programs [23].

A few more features of the Bulgarian (youth) labour market need to be taken into consideration when analysing the quality of STWT. The informal economy in Bulgaria remains one of the highest in the world, with 3 out of 10 wage earners working in unregulated employment relationships in 2016 [18]. Employment protection legislation is generally

weak [16], and fixed-term employment among the young workers is widespread (55.3% in 2014, see [30]).

*2.2. Regional Patterns*

Educational provision and labour market chances are unevenly distributed across the country, whose regions, with the exception of the southwest region and the capital of Sofia, belong to the group of underdeveloped European regions. A report of the Bulgarian Ministry of Regional Development and Public Works, The National Regional Development Strategy (NRDS) for the period 2012–2022 [31], has highlighted an uneven distribution of major cities and transport facilities in the regions, considerable disparities in the socioeconomic development of municipalities within the same region, high structural unemployment rate in certain parts of the regions, and a mismatch between higher educational output and the needs of the private sector. Table 1 shows regionalised indicators at the second level of EUROSTAT's nomenclature of territorial units for statistics NUTS (French acronym for *Nomenclature des Unités Territoriales Statistiques*) for Bulgaria.

The share of the population living in cities of more than 20,000 inhabitants, a measure of urbanisation, varies from 72% in the southwest region to 40% in the northwest region. The latter region, together with certain districts in northeast and southern Bulgaria, has the lowest degree of *urbanisation*, the highest share of elderly people in the population, and the largest population decline due to emigration [32]. These areas cover 10 out of the 28 Bulgarian districts that have lost at least 20% of their population over the last two decades [33]. By contrast, the southwest region, which covers Sofia (the capital) as well as the districts of Blagoevgrad, one of Bulgaria's most significant, economic, educational, and cultural centres beside the capital [28], shows strong urbanisation and agglomeration effects with an increasing population [33]. In addition, the southwest region clearly outperforms the rest of the country as regards the *provision of higher education*. Whereas the share of 30- to 34-year-olds with higher education in 2010 already amounted to 41%, doubling the respective shares in four regions, the southwest region also has the highest provision of higher education institutions, with 20 out of 24 being based in the capital. In stark contrast, the northwest region only has one school of higher learning that provides education at the Bachelor and Master level.

The regions can be further contrasted with respect to the strength of their *local economies*. Whereas the gross domestic product (GDP) per capita of the southwest region reached 75% of the EU27 mean GDP in 2009, the northwest, south central, and north central regions performed two to almost three times lower with just 27%, 31%, and 29% of the European mean, respectively. In 2015, at the NUTS 3 level, the richest district of Sofia (the capital) had a GDP which was 4.2 times larger than that of the poorest Bulgarian district [32]. The Europe-wide most unfavourable socioeconomic conditions of the northwest go hand in hand with poor infrastructures, such as a low density of roads and low levels of internet access [31]. The regions further differ in the sectorial mix of their economy. Whereas Blagoevgrad in the southwest has a diversified economic branch structure [28] and the capital of Sofia scores especially high in the service industry, a remarkable 12% of the GDP in the northwest results from the agriculture sector. The shares of the service sector are at 57% or lower in four out of Bulgaria's six NUTS 2 regions.

These educational and economic characteristics of the regions cumulate in different unemployment rates. The lower educational status of the rural population along with the limited opportunities for economic activity account for higher unemployment rates in the countryside. In 2004, the jobless rate in the rural areas reached 19% as compared to 10% in the urban areas [15]. Even though the national unemployment rate has decreased to 9% in 2015, the unemployment rate remained almost twice as high in certain northern districts (at the NUTS 3 level) compared to the Bulgarian average [28].

To summarise, the educational and economic indicators in Table 1 document the socioeconomic disparities between rural and urban areas, in general, and between certain Bulgarian regions, in particular. Furthermore, Table 1 shows that the ethnic composition

of residents also differs across regions, with Turks and Roma being the largest ethnic groups beyond the ethnic Bulgarians. The highest share of the latter live in the prosperous southwest region, whereas the north central region has the highest level of Turkish residents, and Roma show high shares in the southeast and northwest regions. Next, we summarise ethnic disparities in education and early Employment beyond regional disparities.

**Table 1.** Regional socioeconomic disparities in Bulgaria.

| | Region (NUTS 2) | | | | | | Total |
| | NWR | SWR | SCR | NCR | NER | SER | |
|---|---|---|---|---|---|---|---|
| Population in cities > 20,000 inhabitants (2011) | 40% | 72% | 44% | 50% | 56% | 55% | 56% |
| 30- to 34-year-olds with higher education (2010) | 22% | 41% | 19% | 21% | 27% | 20% | 28% |
| Universities and equivalent higher schools (2010) * | 1 | 24 | 5 | 5 | 6 | 3 | 44 |
| GDP per capita (EU27 = 100%, 2009) | 27% | 75% | 31% | 29% | 36% | 36% | 44% |
| Unemployment rate (2011) | 13% | 7% | 12% | 13% | 16% | 12% | 11% |
| Share of economic sectors (2009): | | | | | | | |
| Agriculture | 12% | 2% | 8% | 9% | 7% | 6% | 5% |
| Industry | 31% | 25% | 38% | 34% | 28% | 43% | 31% |
| Services | 57% | 73% | 54% | 57% | 65% | 51% | 64% |
| Ethnic belonging ** | | | | | | | |
| Ethnic Bulgarian | 91% | 94% | 80% | 77% | 76% | 82% | 85% |
| Turkish | 2% | 1% | 13% | 19% | 16% | 9% | 9% |
| Roma | 7% | 3% | 5% | 3% | 6% | 8% | 5% |

Abbreviations: NWR = northwest region; SWR = southwest region; SCR = south central region; NCR = north central region; NER = northeast region; SER = southeast region; Source: [31], ** [34], * [35].

### 2.3. Ethnic Disparities in Education and Early Employment

Social stratification in Bulgarian schools and in the access to higher education is of the highest among European Union countries [23,36]. This is reflected, among other areas, in the huge disparities between ethnic Bulgarian, ethnic Turks, and Roma in educational attainment as census 2011 data highlight (see Table 2). Whereas 70% of Bulgarian residents had accomplished upper secondary education or higher education, the respective shares are much lower among the Turkish residents (30%) and especially the Roma residents (7.2%). Higher education participation has been very low among ethnic Turks and almost inexistent among the Roma. The rates of Roma who did maximally achieve primary education a decade ago was alarmingly high at 58% (Turks: 27%; ethnic Bulgarians: 9.5%).

**Table 2.** Ethnic disparities in educational attainment of residents (in %).

| | Higher Education | Upper Secondary | Lower Secondary | Primary | Below Primary | Total |
|---|---|---|---|---|---|---|
| Bulgarian | 22.8 | 47.5 | 20.2 | 5.6 | 3.9 | 100 |
| Turkish | 4.1 | 25.9 | 43.0 | 15.6 | 11.4 | 100 |
| Roma | 0.3 | 6.9 | 35.2 | 29.2 | 28.4 | 100 |
| Total | 20.1 | 43.7 | 22.9 | 7.5 | 5.8 | 100 |

Source: 2011 census data, own calculations [34].

Scientific studies on different ethnic student groups concentrate on the Roma, whereas research on students from Turkish origin and their STWT remains remarkably scarce, despite their higher population share (9%, see Table 1) compared to the Roma (5%). Schooling is of relatively poorer quality for both groups because of the higher poverty and geographic isolation in the regions populated by Turks and Roma, many of whom live in villages where the quality of education is generally lower than that in the urban areas [19]. Still, more than half of the Roma population lives in urban areas, but their children are concentrated in segregated neighbourhoods with complex social problems [37]. Thereby, poor access to quality education is particularly serious for the Roma and, to a lesser degree, for the students from Turkish origin [19]. According to Milenkova and Hristova [20], 70% of the

Roma children at the school age attend segregated schools in poor Roma neighbourhoods, with 27% of those aged 6–15 attending schools in which all schoolmates are Roma. School attendance rates are considerably lower for both ethnic groups compared to those for ethnic Bulgarians. Whereas the initial access of Roma children to primary education is comparatively high, dropping out of the general education system is prevalent, especially after 15 years of age. According to Milenkova and Kovacheva [28], this is related to poverty in the family, low teacher expectations, and negative stereotypes for pupils from the Roma ethnic group.

Roma youth are also known for having very high rates of not participating in employment or education. Katsarska and Monova [18] estimate the share of Roma aged 16–24 years who are out of work, do not study, and do not attend any form of training to be 63%, which is more than three-fold the national mean (see Section 2.1). Unemployment rates among Roma are even four times higher compared to ethnic Bulgarians, and youth unemployment is widespread [15]. The low official employment rates of Roma—only 22.5% of Roma residents were employed in 2016—do, however, not take employment in the informal sector into account, and many economically active Roma are therefore officially counted as unemployed [18]. Limited economic activity is closely related to material deprivation among Roma, lack of proper housing, poor health conditions, and social exclusion [33]. Less is known about labour market integration of young ethnic Turks. Their employment rates are about three quarters of the majority population and they are more likely to be self-employed compared to the Roma [17]. Katsarska and Monova [18] mention that, beside the tobacco production, the construction sector has been a traditional economic niche for ethnic Turks, but also that many Turkish families have left the country to find jobs in Turkey and Western Europe. The intention to work abroad by young adults is generally high in the rural areas (19% in villages), but especially among young Roma (26%) and young Turks (21%), whereas only 16% of ethnic Bulgarians intend to do so [38].

Finally, women from ethnic minorities may be subjected to multiple exclusion risks. Young women of Roma origin combine lower social class affiliation, belonging to an ethnic group which identifies with patriarchal norms regarding the distribution of domestic labour, as well as power relations subordinating them to elderly women in the extended family [39]. All these factors contribute to the low education and labour market participation of young Roma women. As they often have their first child at a young age, they face multiple barriers regarding labour market participation [28].

However, little is known regarding the extent to which the STWT risks of young adults from different ethnic groups vary regionally in Bulgaria. The fact that both the Turks and Roma concentrate in separate and often less urbanised neighbourhoods and that they are overrepresented in less urbanised regions which provide less educational and labour market opportunities may impact on ethnic disparities in STWT. Taking the outlined regional and ethnic disparities in education and work into account, this contribution therefore asks the following questions: How does ethnicity matter for STWT in Bulgaria once educational resources of different ethnic groups are taken into account? And how do regional contexts impact ethnic disparities in employment insecurities at labour market entry?

## 3. Theorising School-to-Work Transitions in Bulgaria

International research has shown that different characteristics of a national educational system influence the labour market integration of young people along various axes, such as different levels of educational attainment, the general education versus vocational training split, the distinction between school-based versus company-based training, or the flexibility of pathways [2,3,5]. In Europe, graduates from upper secondary vocational programmes tend to enter the labour market faster and obtain better quality jobs due to the stronger labour market orientation of their education [40]. However, the international body of STWT literature does not offer sufficient concepts to understand labour market entry processes in Central and Eastern Europe [40–42]. Even though Kogan et al. [3] found evidence that graduates from vocational schools have a faster labour market entry compared to general

secondary education graduates in Central and Eastern European countries too, VET does not necessarily foster smooth labour market entry in some of those countries, such as Estonia [43] or Poland [44]. Bulgaria, in turn, has hardly been covered in comparative analyses of STWT.

Still, some of the core concepts of the established STWT literature can be helpful in conceptualising STWT in the context of Bulgaria. It is often claimed that the linkage between a nation state's educational system and its labour market follows either a qualification or organisational logic for recruitment and the matching of graduates with jobs. The notions of 'qualification space' and 'organisational space', introduced by Maurice et al. [21], refer to the two respective logics. In a qualification space, firms take account of the existing qualification of the workforce and design jobs around the norms of the training system and the capabilities of skilled workers. Careers build upon initial vocational education and firm-internal labour markets play a smaller role. Vocational diplomas signal trustworthy occupational skills and professional habitus. By contrast, in an organisational space, vocational qualifications are less valued and trusted. Firms define jobs according to their own criteria and expect workers to adapt to them [21]. In terms of education, the level of (general) education and grades, as well as the prestige of educational institutions, matter because they signal the potential for individual development. As far as hiring practices in the organisational space are concerned, recruiters value the level of education more than its vocational orientation, with higher education being considered more trustworthy than vocational education. At the same time, educational signals remain weakened and need to be complemented by other information in order to assess the fit between a job candidate and the work organisation. This, in turn, enhances the power of ascriptive categories in the hiring process [45].

Imdorf et al. [45] and Heiniger and Imdorf [12] have argued that the Bulgarian STWT system represents several of the outlined organisational space's characteristics. The Bulgarian system is only occupationally oriented to a limited degree, as shown by the mismatch between labour demands and educational qualification outlined in Section 2.1. Comparing Switzerland and Bulgaria, Heiniger and Imdorf [12] found evidence for the reduced vocational specificity of education in Bulgaria given the relatively weak strength of the empirical linkage between vocational education and employment. The fact that university degrees exhibit stronger linkage than those of vocational education suggests that the former serve as strong signals for Bulgarian employers. The relatively high share of tertiary education in Bulgaria, together with the pronounced stratification of upper secondary education, further supports the classification of the Bulgarian case as organisational space. Indeed, Boyadjieva and Ilieva-Trichkova [23] highlight that the division of general versus vocational education is not sufficient to explain the transition patterns of upper secondary education graduates. Besides the vocational orientation of education, the selectivity of secondary education needs to be taken into account when studying STWT in Bulgaria. Hence, according to signalling theory [46], educational selectivity at the upper-secondary level and higher education differentiate high-ability from lower-ability individuals from an employer's perspective in Bulgaria. In contrast, vocational signals to employers are considered relatively weak in the Bulgarian context, which may increase bumpy STWT of youth with vocational education.

Even though the national alignment of Maurice et al. [21] typology has significantly enriched international comparative analysis of STWT in Europe, its national reference of analysis represents a shortcoming because it does not account for regional differences in STWT patterns. Recent research on regional training and labour markets, however, shows that demand and supply for training positions and jobs can vary significantly at the regional level [47,48] and that the market value of educational degrees can depend on regional economic conditions [49]. Local economic conditions may also moderate social inequalities in training and labour markets. Matching processes in regional labour markets are a complex interplay of job applicants' self-selection and companies' decision-making processes, which result in applicant hierarchies [48]. According to the job competition

model [50,51], employers rank applicants and decide which workers go to the front of the 'labour queue' and which stay at the back, based on their views as to who is the best available employee. Skills and credentials, as well as ascriptive categories such as ethnicity, gender, or age, can be decisive for employers to define a "good enough" employee. Especially in Bulgaria's organisational space, selective and higher education categories, as well as ethnic categories, may serve as positional goods in the 'labour queue'. In light of comparing educational levels, ethnic discrimination in hiring may be taken into consideration by employers, especially against the Roma job seekers [17,52] in order to ensure harmonious social relations between co-workers or with customers and business partners, i.e., to prevent (suspected) social conflicts or workplace bullying between employees and to avoid new staff whose 'mentality' or 'face' is considered incompatible with the company's own culture [53]. On their sides, job candidates try to get the job with the best set of characteristics they can, considering pay, reachability, harassment-free workplace, or amiable fellow workers [54]. Hence, smooth versus bumpy transitions to stable or insecure jobs or unemployment are outcomes of complex queuing processes.

So far, the labour market disadvantages of the Roma (and Turks) have mainly been explained by their low educational qualifications, the deterioration of opportunities to be trained in the formal economy, the lack of social ties with ethnic Bulgarian employers, and structural changes in the contemporary economy [28]. The lack of formal education can, therefore, not provide a full explanation of the relatively high unemployment rates faced by Roma and the fact that at least part of the problem may arise from discrimination in employment [52]. With regard to labour market entry, we can, therefore, assume that *young Roma and Turks who leave formal education are less likely to make a transition towards stable employment compared to ethnic Bulgarians with similar formal education (H1)*.

These explanations do not, however, take into account that ethnic disparities in STWT could potentially vary across regions. Research on the impact of urbanisation on smooth STWT is inconsistent. Urbanisation may positively impact on job seekers' job queues and smooth transitions because urbanised areas offer more jobs and better commuting infrastructures as well as shorter distances to reach acceptable jobs, which facilitates the outcomes of matching jobseekers and employers [47]. In contrast, urban anonymity may make STWT more difficult because, in small towns, the network of friends makes it easier for young people to find a job [55]; hence, limited information and network connections in urban areas may outweigh the advantage of (public) transport infrastructures. Urbanisation may be associated with less disadvantages of ethnic minorities in Bulgaria. The majority of Roma and Turks live in the countryside where they have much less access to infrastructure, work opportunities, and health-care facilities than those living in urban areas [17]. Whereas the overall impact of urbanisation on STWT remains ambivalent, once the economic context (see below) is being accounted for, *we expect less ethnic disparities in STWT in more urbanised regions compared to less urbanised areas (H2)*.

It seems obvious that STWT become less smooth and the risk of unemployment increases the weaker regional economies due to a lack of jobs and reduced job turnover. Hence, regions with high unemployment hinder young people to smoothly integrate into the labour market [2]. From the better equipped job seekers' view, high rates of unemployment may make previously spurned jobs more desirable, removing the less skilled (or desired) candidates for the same jobs to the bottom of the labour queue and crowding them out into unemployment [54]. In order to better understand if and how regional economic conditions in Bulgaria relate to ethnic disparities at labour market entry, one needs to consider the implications of ethnic categories on hiring processes. As described above, in an organisational space, ascriptive categories may be strengthened at the cost of educational signals in the hiring processes, especially if job candidates are young and bring along little work experience. The question then arises of how an employer's scope of using ethnic ascription in the recruitment process depends on economic contexts. Previous research findings on this matter are inconsistent. For Sweden, Carlsson et al. [56] show that ethnic discrimination in hiring increases when more jobs are available and fewer people

are unemployed. By contrast, Baert et al. [57] find the opposite for the Belgium labour market, namely, that candidates with a foreign-sounding name have to send out twice as many applications compared to natives when job openings become scarce and the number of unemployed is high. This pattern is in line with older evidence from the US where the unemployment gap between African Americans and Whites has narrowed in good times and increased in bad times [54]. We therefore assume that *ethnic disparities in STWT decrease with improving regional economies (H3)*, i.e., where labour market demands are higher and aggregate unemployment rates are lower.

Finally, the *sectoral composition* of the regional labour market may matter for ethnic disparities in STWT. With the shift from an agricultural and manufacturing-based economy to a service economy, employers increasingly prefer cognitive and soft skills to physical ones [54]. This should not necessarily impact on employment opportunities as such, but it may impact employer's labour queue, with desirable factors, such as looks, the ability to fit in as a team player, or manners gaining in importance, especially in work organisations in which employees regularly interact with customers. Through her or his appearance, language, and manners, a young person may appeal more or less to customers and hence influence a company's customer retention [53]. We therefore assume that *ethnic disparities in STWT increase in regional labour markets where the share of the service sector is more pronounced (H4)*. The relatively high importance of the service sector in Bulgaria [45] may cause the employment prospects of those from ethnic minorities to deteriorate because firms in the service sector rather prefer ethnic Bulgarians.

In sum, we assume that STWT for youths in Bulgaria depend on regional socio-economic contexts, and that the degree of urbanisation, as well as the strength and structure of the regional economy, can impact on ethnic disparities at the labour market entry, beyond the high importance of education.

## 4. Data and Method

### 4.1. Data Source

Data on STWT in Bulgaria were collected through standardised face-to-face interviews as part of the first Bulgarian School Leaver Survey (BSLS) [58], conducted between January and October 2014 on a sample of 2103 young adults. The survey's target group consisted of recent school leavers who were residents of Bulgaria, 15 to 34 years old, and had completed or stopped their formal education for the first time and for at least one year in the last 5 years preceding the survey (2009–2013). Two-stage cluster sampling structured by the NUTS 2 region and the size of the settlement was applied (survey response rate: 81%). In total, three samples were drawn: one main sample which is representative at national level ($n = 1503$); one booster sample, representative for the northwest region, $n = 300$; and one booster sample, representative for the southwest region (excl. the capital of Sofia) $n = 300$. The booster of the northwest region has resulted in an overrepresentation of participants from the Roma minority in the analytical sample. The survey's Scientific Use File provides weight which can help to control the survey design as well as the survey non-response at a regional and household level.

### 4.2. Variables

The *dependent variable* of labour market entry has two outcomes to measure labour market insecurity: *towards unemployment* and *towards employment* (*ref. category*). For each individual case, STWT was constructed using the individual calendar data, which covered 16 potential activities (see Appendix A) on a monthly base for the period between leaving formal education and participating in the survey. Though the calendar data do not take into account quality of the employment in terms of remuneration, job authority, or part-time employment, they measured contracted vs. non-contracted (grey economy) work.

Most of the cases in the calendar data consisted of simple and easy-to-classify patterns such as:

- unemployment for the whole observed period;

- contracted employment for the whole period;
- relatively short unemployment period followed by a longer contracted employment period, etc.

The remaining more complex transition cases were carefully examined one by one. Three transition types were finally classified as 'towards employment'. The first two patterns reflect a (relatively) smooth transition from school to stable contracted employment (direct stable contracted employment, and unemployment to stable contracted employment). The third transition pattern includes many different strategies, including job hopping (changing multiple jobs for a relatively short period), seasonal employment, and even employment in the grey economy (without a contract); however, they all lead to the respondent being employed. Another two transition patterns were classified as 'towards unemployment'. These include cases who had some employment history but their current status when surveyed was unemployment and, in some cases, their transition paths ended with quite a long spell of not having a job. Finally, the second transition type includes respondents who have been unemployed since they left school. The resulting measure for labour market entry does not simply distinguish between positive (e.g., employed or in education) and negative (e.g., unemployed) states (see the criticism by Ritschard et al. [59] of this widespread measure with regard to previous studies of labour market entry). Rather, it grasps trajectories towards more or less stable or secure employment. It accounts for the fact that in an organisational space, such as in Bulgaria, there can be relatively easy access to available jobs, though many of them offer little mid- to long-term employment security. Respondents who combined spells of maternity/paternity and unemployment or who reported being on maternity/paternity leave at the time of the interview ($n = 125$, whereof 95% women) as well as those who returned to education ($n = 149$, whereof 92% ethnic Bulgarians) are excluded from the analysis. Both transition patterns are quite specific and would deserve a more in-depth analysis which is complicated by the limited number of cases of the respective patterns. For example, mothers on maternity leave, which usually is 410 days (45 of which come before birth), could also use a second year of leave if they wish so, though at a lower allowance. Furthermore, with the mother's consent, when the child reaches six months, the leave can be transferred to the father for the rest of the period. People on maternity/paternity leave may return to their previous job afterwards if the latter was a contracted job. The remaining $n = 1812$ cases consist of 1129 (62%) individuals coded as 'towards employment' and 683 (38%) cases coded 'towards unemployment'. Because respondents have left formal education one to five years preceding the survey, the observed interval covered by the dependent variable is of different length. This problem resulting from the sampling procedure is partly addressed by including control variables for each year of leaving education in the multivariate models.

*Independent variables*: The level-two category of the multilevel models, *Region*, is a categorical variable for Bulgaria's 28 districts (NUTS 3 level). Three macro-variables are accounted for at this regional aggregate level with regard to the survey respondents' place of residence: (a) *Urbanisation* measures the percentage of a region's inhabitants who live in cities of at least 20,000 residents based on the 2011 Census (% living in cities); (b) *Regional Unemployment* measures the average overall unemployment (%) for the years 2012–2014; and (c) *Service Sector Share* reflects the share (%) of a region's GDP produced in the service sector in the years 2010–2014. At the individual level, *Ethnicity* was measured as self-reported ethnicity status and has four categories: Ethnic Bulgarian (ref. category), Roma, Turk, and 'other'. *Education* takes horizontal differentiation at the upper secondary level [23] into account and distinguishes six categories of educational attainment: basic or lower education, general upper secondary (ref. category), vocational upper secondary, profiled upper secondary, post-secondary/lower tertiary (3 or 4 years of study), and long tertiary education (at least 5 years of study).

*Control variables* include four dummy variables of year of leaving education (for the four years 2010–2013; ref. category: 2009). *Gender* differentiates between female and male (ref. category) and *children* is a dummy variable for having at least one child at the time of

the survey. Finally, we control for *parental educational status* (at least one parent with higher education/none of the parents with higher education).

*4.3. Method and Strategy of Analysis*

As a first step, we applied bivariate descriptive statistics to explore how STWTs in Bulgaria are structured by education, ethnicity, and region. The descriptive findings are presented using graphical illustrations (bar plots) in Figures 1 and 2.

In a second step, we applied stepwise multilevel logistic regression modelling in order to assess how the three macro-variables, i.e., urbanisation (model 1), regional unemployment (model 2), and service sector share (model 3), impact individual STWT towards unemployment (ref. category: towards employment). All three models, as well as the four remaining models, control for individual education and a series of control variables outlined in Section 4.2. Model 4 accounts for the three macro-variables simultaneously and it includes the main effect of ethnicity on STWT in order to test hypothesis H1. To assess the hypotheses H2, H3, and H4, the remaining three models include cross-level interactions between ethnicity and urbanisation (model 5), regional unemployment (model 6), and the size of the service sector (model 7), respectively. We applied random-effects logit models as they help to estimate cross-level interaction terms [60]. In order to run all models on identical cases, missing values were omitted from the analysis using listwise deletion. This resulted in a database of 1719 cases. Table 3 reports the average marginal effects of all variables in Models 1 to 4. Figure 3a,b plot the cross-level interaction effects from model 6, which shows the best fit with the data, in terms of predicted probabilities of transitioning towards unemployment. The coefficients and model statistics for all models (including the null model) are given in Appendix B. All descriptive and multivariate analysis include sampling weights provided in the BSLS 2014 scientific use file.

## 5. Results

*5.1. Bivariate Analysis*

Figure 1 shows how education matters for labour market entry at the national level and for each of the three ethnic groups. Overall, the higher the educational level and the more selective the upper secondary education, the less the risk to transition towards unemployment. School leavers with only basic or lower education face a very high percentage of 68% to transition towards unemployment. Vocational and general education show a similar transition risk, whereas those with profiled upper secondary general education have lower shares of those who face unemployment (26% vs. 38%). The overall pattern more or less reflects the transition pattern of ethnic Bulgarians, while the importance of formal education for ethnic minorities differs significantly for successful STWTs.

Due to limited case numbers for certain educational categories, weighted percentages for Roma can only be calculated for either general, basic or lower, and vocational education. For ethnic Turks, sufficient cases for post-secondary/lower tertiary education are also available. The latter helps Turks to transition towards employment, whereas vocational education only slightly reduces the transition risk compared to young people with basic or lower education (48% vs. 52%). Strikingly, Turks with upper secondary general education face a strikingly high risk to face unemployment. This effect is mainly caused by female Turks with general education who did not report being in maternity leave. If Turks with comparable formal education lag behind the ethnic Bulgarians, the low transition rate towards employment for Roma with vocational education (14%, *n* = 45) is even more concerning. Roma seem to be somewhat protected from transitions towards unemployment if they achieve upper secondary general education, but their return on formal education remains considerably lower compared to ethnic Bulgarians. All in all, 76% of the Roma (*n* = 299) and 57% of Turks (*n* = 95) in our sample transition towards unemployment, compared to only 27% of ethnic Bulgarians (*n* = 1356). The classification by educational categories in Figure 1 suggests that formal education can only partly explain these huge ethnic disparities in STWT.
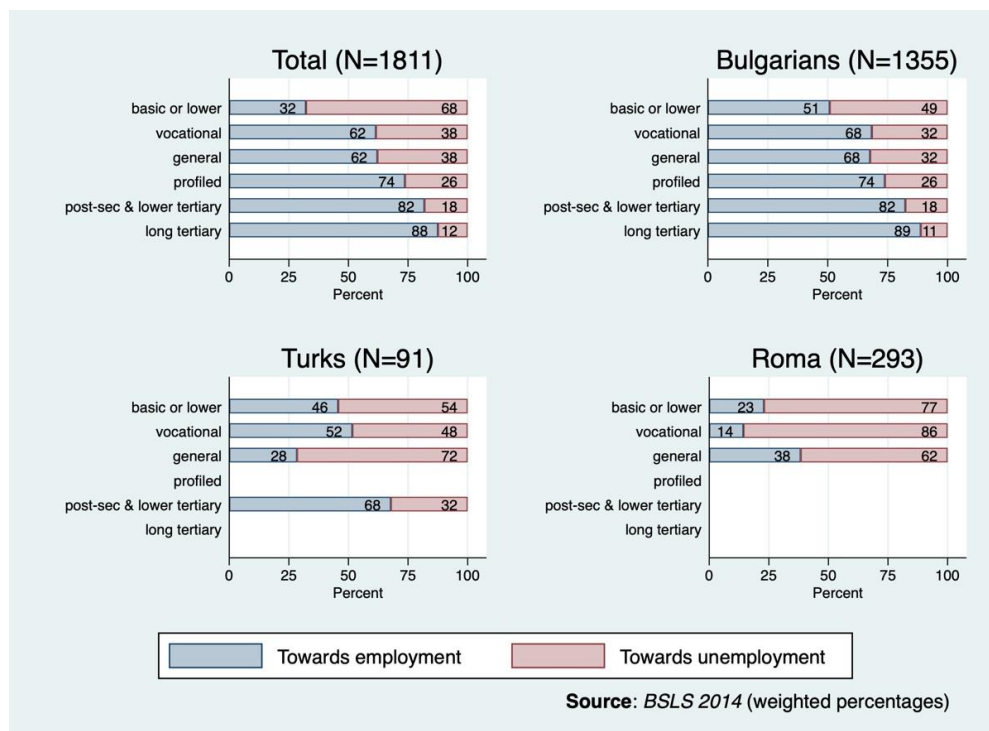
**Figure 1.** School-to-work transitions in Bulgaria by ethnicity and education.

Because our main interest is to learn more about regional disparities in STWT and its impact on ethnic disparities, Figure 2 highlights the different risks of transitioning towards employment vs. unemployment across the 28 Bulgarian districts.
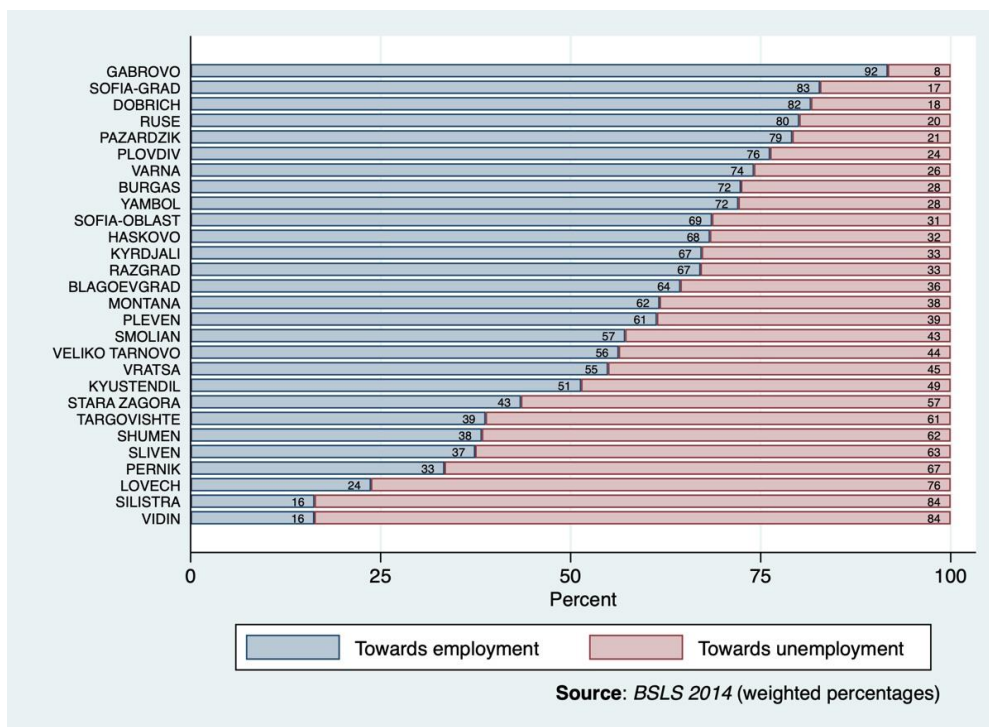


**Figure 2.** School-to-work transition by region.

Consistent with the reviewed literature, residents in some northwestern districts are among those facing the highest risk to transition towards unemployment (Vidin with 84% and Lovech with 76%), the respective risk is considerably reduced in the Bulgarian

capital (17% in Sofia-Grad) and in districts with a strong tourist industry bordering the Black Sea (18%, 26%, and 28% in Dobrich, Varna, and Burgas, respectively). According to Figure 2, there is considerable variance within the six basic regions at the NUTS 2 level. For instance, the north central region, which has average and below economic indicators according to Table 1, also covers the district of Gabrovo which shows a very low transition risk towards unemployment (8%). Overall, the STWT risks vary considerably at the district level. How macro-factors relate to such regional disparities in STWT and how they affect ethnic disparities is analysed in the following section.

*5.2. Multivariate Analysis*

In order to analyse how regional contexts and ethnicity matter for STWT in Bulgaria, Table 3 presents the predicted probabilities and average marginal effects of the first four models. The underlying coefficients of the multilevel logistic regressions, as well as those of the remaining models, are presented in full in the Appendix B table. The latter also includes model statistics, including those of the empty model (null model). According to the intraclass correlation of the null model (see Appendix B), 19% of the chances of transitioning towards unemployment (ref. transition towards employment) can be explained by between-district differences (and conversely 81% by within-district differences). In models 1 to 3, the regional urbanisation variables, regional unemployment, and service sector share are analysed one by one, together with the education variable and a series of additional control variables. Table 3 shows that with each additional percentage point of residents living in cities of above 20,000 residents, the respondents' risk of transitioning towards unemployment is reduced by one percentage point (AME = −0.01). Whereas urbanisation significantly reduces the STWT risk, the regional level of unemployment increases the respective probabilities. With each additional percentage point of overall regional unemployment, young people's risk of transitioning towards unemployment rises by two percentage points (AME = 0.02). In contrast, the regional share of the service sector shows no effect on STWT. The model statistics in Appendix B point out that regional unemployment is a slightly stronger predictor for STWT than urbanisation. Models 1 to 3 show comparable effects of formal education on STWT and the respective predicted probabilities remain almost the same across models. The predictions of model 2 show, under the condition of average regional unemployment, young people with only basic or lower education have a 0.65 risk of transitioning towards unemployment. This risk is 24 percentage points lower for those with upper secondary general education (predicted probability: 0.41). Those with vocational education do not differ significantly from the latter, but those with profiled (more selective) secondary education have a reduced risk (0.29) to face unemployment. By far, the best protection is long tertiary education with a 0.13 probability to transition towards unemployment. Once formal education is controlled for, neither gender nor parental education affects STWT. Having children, however, increases the unemployment risk by nine percentage points. Additional analyses that include an interaction term of gender and having children (not shown) highlight that this effect is solely driven by women with children who have a 14 percentage points and an increased transition risk to unemployment (predicted probability: 0.50). Finally, with each year since leaving formal education, the risk of transitioning towards unemployment decreases remarkably from 0.62 in the first year to 0.27 in the fifth year since leaving formal education, and all other variables were averaged.

**Table 3.** School-to-work transition towards unemployment: predicted probabilities and average marginal effects of Models 1 to 4.

| | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
|---|---|---|---|---|---|---|---|---|
| | **Pr. Prob.** | **AME** | **Pr. Prob.** | **AME** | **Pr. Prob.** | **AME** | **Pr. Prob.** | **AME** |
| *Regional variables* | | | | | | | | |
| Urbanisation | | −0.01 * | | | | | | −0.00 |
| Unemployment | | | | 0.02 ** | | | | 0.01 * |
| Service Sector | | | | | | 0.00 | | 0.00 |
| *Education* | | | | | | | | |
| Basic or lower | 0.66 | 0.24 ** | 0.65 | 0.24 ** | 0.68 | 0.24 ** | 0.54 | 0.11 + |
| General (ref.) | 0.40 | | 0.41 | | 0.43 | | 0.43 | |
| Vocational | 0.36 | −0.05 | 0.36 | −0.05 | 0.38 | −0.05 | 0.38 | −0.05 |
| Profiled | 0.29 | −0.11 * | 0.29 | −0.11 * | 0.32 | −0.12 * | 0.33 | −0.10 + |
| Post-sec. & lower tertiary | 0.21 | −0.19 ** | 0.21 | −0.19 ** | 0.23 | −0.20 ** | 0.24 | −0.19 ** |
| Long tertiary | 0.13 | −0.27 ** | 0.13 | −0.28 ** | 0.14 | −0.29 ** | 0.16 | −0.26 ** |
| *Gender* | | | | | | | | |
| Male (ref.) | 0.36 | | 0.37 | | 0.39 | | 0.36 | |
| Female | 0.39 | 0.03 | 0.39 | 0.02 | 0.41 | 0.03 | 0.39 | 0.03 |
| *Children* | | | | | | | | |
| No (ref.) | 0.36 | | 0.36 | | 0.39 | | 0.37 | |
| Yes | 0.45 | 0.09 * | 0.45 | 0.09 * | 0.47 | 0.09 * | 0.42 | 0.06 |
| *Parental education* | | | | | | | | |
| No higher education (ref.) | 0.36 | | 0.38 | | 0.41 | | 0.38 | |
| Higher education | 0.32 | −0.03 | 0.35 | −0.03 | 0.37 | −0.03 | 0.37 | −0.01 |
| *Year of graduation* | | | | | | | | |
| 2009 (ref.) | 0.27 | | 0.27 | | 0.29 | | 0.28 | |
| 2010 | 0.34 | 0.07 * | 0.34 | 0.07 * | 0.36 | 0.08 * | 0.34 | 0.06 * |
| 2011 | 0.38 | 0.10 * | 0.38 | 0.11 * | 0.40 | 0.12 * | 0.37 | 0.10 * |
| 2012 | 0.46 | 0.19 ** | 0.47 | 0.20 ** | 0.49 | 0.20 ** | 0.46 | 0.18 ** |
| 2013 | 0.61 | 0.34 ** | 0.62 | 0.34 ** | 0.64 | 0.34 ** | 0.62 | 0.34 ** |
| *Ethnicity* | | | | | | | | |
| Ethnic Bulgarians (ref.) | | | | | | | 0.32 | |
| Roma | | | | | | | 0.58 | 0.25 ** |
| Turks | | | | | | | 0.44 | 0.12 |
| Other | | | | | | | 0.35 | 0.03 |
| Observations | 1719 | | 1719 | | 1719 | | 1719 | |
| Regions | 28 | | 28 | | 28 | | 28 | |

Pr. Prob.: Predicted probabilities (all predictions significant at $p < 0.001$; categorical variables shown only); AME: average marginal effects, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$; Source: BSLS 2014.

In model 4, self-reported ethnicity is added to the series of multilevel logistic regressions, controlling simultaneously for all three context variables. Holding all other variables constant, with a predicted probability of 0.58, ethnic Roma have a 25 percentage points higher risk of transitioning towards unemployment compared to ethnic Bulgarians, whose average unemployment risk stands at 0.32. Even though the respective risk is increased for Turks (0.43), the average marginal effect remains insignificant (and though does the respective coefficient in the Appendix B table). Hence, hypothesis H1, i.e., the assumption that young Roma and Turks who leave formal education are less likely to make a transition towards stable employment compared to ethnic Bulgarians with similar education, can only partly be confirmed. The assumption holds true for the young Roma but not for young Turks. The Appendix B table shows that the variance at the regional level is being reduced (to 0.50) compared to the previous models once ethnicity is accounted for. The drop of the ICC to 0.13 shows that adding ethnicity at the individual level explains some of the variance at the regional level. In the remaining steps, we therefore investigate how the effect of ethnicity on STWT is intertwined with regional characteristics.

Among the three context variables in model 4, the effect of regional unemployment remains significant when controlling for urbanisation and the service sector share which both become insignificant. To test the remaining three hypotheses, cross-level interaction terms between ethnicity and the regional variables are added to model 4. The interaction

estimates are reported in the Appendix B, whereby no significant interactions can be found between ethnicity and urbanisation (model 5) as well as between ethnicity and the service sector share (model 7). Hence, our hypotheses that ethnic disparities in STWT decrease in more urbanised regions (H2) and in regional labour markets with a more pronounced service sector (H4) are rejected. In contrast, we find strong evidence for hypothesis H3 that ethnic disparities in STWTs decrease with improving regional economies. Furthermore, the regional unemployment interacts significantly with ethnic origin, according to model 6. For young people of both Roma and Turkish origin, the risk of transitioning towards unemployment does increase significantly with the increase in regional unemployment.

Based on the estimates of model 6 (which also holds the best model statistics according to Appendix B), the predicted probabilities for ethnic Bulgarians, Roma, and Turks, including their confidence intervals, are plotted in Figure 3a,b. These predictions hold true for average levels of urbanisation, service sector share, individual education, and the remaining individual control variables. Both figures present the result for young ethnic Bulgarians, which hardly change across contexts with different levels of unemployment. Their risk of transitioning towards unemployment remains stable around the value of 0.32 already reported in Table 3 (model 4). In contrast, the unemployment risks of both Roma and Turks increase considerably with a deteriorating regional economy and exceed 0.70 for young Roma and 0.60 for young Turks in districts, respectively, with an unemployment rate around 20% in the years 2012 to 2014, such as Vidin, Silistra, Razgrad, and Smolian (the predictions reach almost 0.80 for the district of Shumen which had a 25% unemployment rate at the time). In contrast, in districts with relatively low unemployment rates, such as Sofia Capital (7%), Kyrdjali (8%), and Gabrovo (9%), the STWT risks did not significantly differ between young Roma, Turks, and ethnic Bulgarians, as similar average levels of education and other variables presumed.
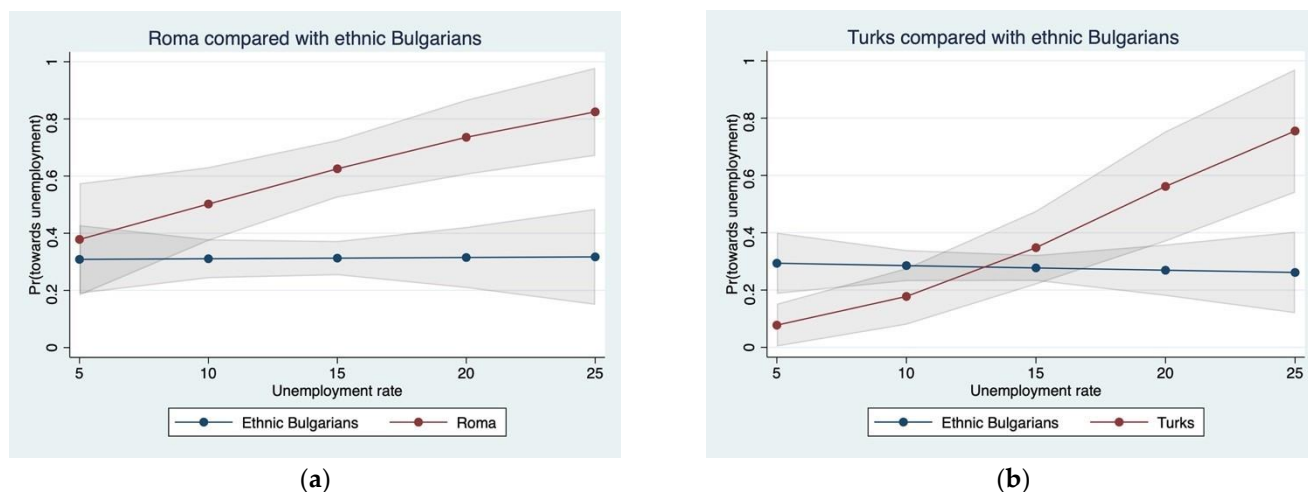


(a)  (b)

**Figure 3.** (**a**) STWT by ethnicity (Roma vs. ethnic Bulgarians) and unemployment rate (cross-level interaction). (**b**) STWT by ethnicity (Turks vs. ethnic Bulgarians) and unemployment rate (cross-level interaction).

## 6. Discussion and Conclusions

The Bulgarian study highlights the interplay of ethnicity and regional economies in determining individual school-to-work transitions (STWT) in an Eastern European country with pronounced regional disparities. It comes as little surprise that education matters for labour market entry at the national level, at least for the majority of groups. Post-secondary and tertiary education also protect ethnic Bulgarians, as well as, young Turks from transitioning towards unemployment after leaving formal education, although to a lower degree. This finding is in line with studies in other Central and Eastern European countries showing that the level of education and the educational performance increases

the chances for successful entry into the labour market [3]. Roma, however, have almost no access to tertiary education. Neither does vocational education protect them from transitioning towards unemployment according to our descriptive analysis.

All in all, education can only partly explain the considerable ethnic disparities in STWTs. Overall, 76% of Roma and 57% of Turks compared to 27% of ethnic Bulgarians transitioned towards unemployment in the first half of the 2010s. Once education and other variables are controlled for, Roma still have a 25 percentage increase in the probability of transitioning towards unemployment compared to ethnic Bulgarians. Our results are in line with Katsarska and Monova [18] who pointed to the paradox that the positive trend of the generally increasing inclusion of Roma children in secondary education over the period 2004–2011 did not have any impact on the employment level of the young Roma [28]. The fact that significant ethnic disparities remain when controlling for educational attainment confines the validity of the common belief that the underrepresentation of Roma in the workforce is mainly explained by their low level of education.

A regional perspective allows for a more in-depth analysis of ethnic disparities in STWTs. Transition risks at labour market entry differ considerably across regions. Our analysis shows that regional conditions, such as the level of urbanisation and the strength of the local economy, facilitate smooth STWT, while the latter also moderates ethnic disparities. Both young Roma as well as ethnic Turks are less disadvantaged to transition towards employment compared to ethnic Bulgarians once the local economy gets stronger. Our findings are in line with previous research which has shown that there are less disadvantages faced by job candidates with a foreign-sounding name in Belgium and Blacks in the US when the number of unemployed was lower [54,57]. In Bulgarian regions with more job openings and fewer unemployed people, such as in the southwest or in the Black Sea regions, more opportunities open up for young workers from Roma and Turkish origins in their quest to find more stable jobs. By contrast, they face poorer labour market outcomes when labour market competition is high. Their lower education level compared to ethnic Bulgarian certainly adds to their labour market exclusion, but it cannot convincingly explain it.

As regards our theoretical framework which builds on comparative STWT concepts to approach the Bulgarian case and on the labour and job queueing approach to allow for a more fine-graded modelling of regional job search and recruitment, our findings support some of our assumptions about the implications of ethnic categories in the hiring process. In an organisational space of STWT, where the occupational specificity of the education system and the linkage of vocational education to jobs are relatively weak, educational degrees do not sufficiently signal trustworthiness to employers. Bulgarian employers thereby pay more attention to the level and selectivity of education rather than to vocational degrees when they assess a job applicant's potential to bring along and further develop productive skills. Because the signal of education remains weakened, employers take additional categories into account. If job candidates are young and bring along little work experience, ascriptive categories move to the foreground [53]. Young Roma, who suffer from ethnic boundary making by ethnic Bulgarians and with whom they lack social ties [18], are positioned at the bottom of the labour queue by employers. The latter are keen to ensure harmonious social relations between co-workers or with customers and business partners and to prevent (suspected) social conflicts at the workplace in order to increase productivity [53]. On their sides, job candidates try to get reachable jobs which offer returns on educational investment as well as harassment-free conditions. As young Roma experience a relatively low return, especially on vocational education, this may result in low incentives to invest in it [17]. As regards ethnic Bulgarian job seekers, high rates of unemployment make them seek less attractive jobs, removing the less skilled or less desired candidates for the same jobs to the bottom of the employer's labour queue and crowding them out into unemployment [54].

However, as far as our theoretical considerations are concerned, it is advisable to keep Furlong et al. [61] in mind when assessing the supply-sided mechanisms underlying the relationship between economic opportunity structures and smooth STWT. The Scottish researchers found that neighbourhoods, rather than (regional) labour markets, matter for

shaping young people's aspirations. Similarly, neighbourhood deprivation experienced by many Roma and Turkish children may affect their school attainment which, in turn, can mediate their occupational and educational aspirations. Young people develop a subjective awareness of objective opportunity structures which is more a product of neighbourhoods than of regional economic conditions [61]. Regions with broader educational and economic opportunity structures may provide a wider range of social and economic alternatives [62], but young people need a respective neighbourhood which allows them to align their educational aspirations and job searching patterns with the available opportunities. As Wicht [63] (p. 299) puts it, 'regional contexts are both the setting for and the result of social action'. For the Bulgarian case, further research is needed about how regional disparities play out at the subjective level of young job seekers and employers in order to strengthen STWT theory at the regional level.

Our study has several limitations. First, the size of the sample, while quite ambitious for a relatively small country such as Bulgaria, is restricted in terms of more detailed regional analysis. Whereas Roma have been oversampled in order to assure robust empirical insights, young people of Turkish origin remain underrepresented in our sample. A bigger sample would also be necessary to take the important intersectionality between ethnicity and gender into account. As is the case with previous research [13,28], our analysis does not pay sufficient attention to the large differences in employment between young women and men of Roma and Turkish origin, taking into account early marriages and related transitions from school to maternity. Second, our educational measure is limited to formal education and does not cover the (locally and regionally varying) quality of education. It is well known that most of Roma and Turkish children lack access to quality basic and secondary education. A large majority of Roma children study in segregated schools in the Roma neighbourhoods where the quality of education is considerably lower than that offered in the schools of their Bulgarian peers. Schools in poorer and isolated regions or in segregated urban areas are still characterised by inadequate coverage of the children in the preschool age, poor material resources and infrastructures, insufficiently qualified and motivated teachers, and a shortage of Roma teachers [19,37,64]. Hence, part of the remaining ethnic disparities in STWTs when controlling for formal education may still relate to differences in the quality of education that young adults have received. Third, STWTs in Bulgaria are often intertwined with complex internal and international migration patterns, which were not explored further in the current study. Roma and Turks may temporarily emigrate abroad for seasonal work in agriculture or construction rather than to register for unemployment or to increase their qualifications [38,47]. Finally, we could only analyse short- to mid-term labour market integration processes, with respondents having left formal education one to five years before they were surveyed. Further research will be necessary to assess the extent to which the two analysed transition patterns impact future employment trajectories.

Our analysis finally provides some insights for regional policy. The consequences of a poorly developed regional educational infrastructure are not new, as children from rural areas have poorer educational opportunities than those from urban areas due to poorer educational infrastructure that need to be expanded and improved, especially in rural areas [65]. Moreover, as vocational secondary education does not sufficiently lead to stable employment in Bulgaria, special attention should be paid to the development of vocational education at both national and regional levels, especially for youth from Roma and Turkish origin who cannot benefit from profiled upper secondary, post-secondary, and tertiary education. Policies should aim to improve VET quality, and its relevance to the labour market should be more effectively implemented. Still, one needs to be cautious with regard to how an improved educational offer can serve the most deprived youth, namely the high share of Roma children who do not finish secondary education. As Furlong et al. [61] (p. 562) wrote, 'the future labour force cannot be upgraded simply by extending the existing provision of education and training as the educational and occupational horizons of many young people are likely to be restricted by neighbourhood deprivation'. Roma parents need

incentives and their children need adequate role models to engage in education [64]. Last but not least, because the labour market access of young Roma and Turks is embedded in regional socioeconomic contexts, any improvement in the labour market situation not only depends on their education, but also on public and private employment opportunities.

## Appendix A

Possible status options in the individual calendar questions.

| | |
|---|---|
| 1 | Paid work as an employee (with contract) |
| 2 | Paid work as an employee (without contract) |
| 3 | Paid work as self-employed (with contract) |
| 4 | Paid work as self-employed (without contract) |
| 5 | Paid work as a family helper |
| 6 | Unpaid work (excluding housework) |
| 7 | Unemployed (including looking for a first job since leaving education) |
| 8 | Return to education (pupil/student/postgraduate student) |
| 9 | Apprenticeship or probation after graduating (traineeship) |
| 10 | On-the-job training |
| 11 | Housework |
| 12 | Maternity/paternity leave |
| 13 | Unable to work due to permanent disability or illness |
| 14 | Working abroad |
| 15 | Education/training abroad |
| 16 | Other |

## Appendix B

| | Null Model | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|---|---|---|---|---|---|---|---|---|
| *Regional variables* | | | | | | | | |
| Urbanization | | −0.03 * | | | −0.02 | −0.02 | −0.03 + | −0.02 |
| Unemployment | | | 0.11 ** | | 0.07 * | 0.07 * | 0.00 | 0.07 * |
| Service Sector | | | | 0.00 | 0.01 | 0.01 | 0.02 | 0.02 |
| *Education* (ref. general) | | | | | | | | |
| Basic or lower | | 1.22 ** | 1.22 ** | 1.22 ** | 0.56 + | 0.55 * | 0.57 * | 0.55 + |
| Vocational | | −0.25 | −0.25 | −0.25 | −0.27 | −0.27 | −0.23 | −0.27 |
| Profiled | | −0.60 * | −0.60 * | −0.61 * | −0.51 + | −0.50 + | −0.51 + | −0.52 + |
| Post-sec & lower tertiary | | −1.12 ** | −1.11 ** | −1.13 ** | −1.06 ** | −1.06 ** | −1.07 ** | −1.06 ** |
| Long tertiary | | −1.78 ** | −1.79 ** | −1.79 ** | −1.66 ** | −1.64 ** | −1.59 ** | −1.66 ** |
| *Control variables* | | | | | | | | |
| Female (ref. male) | | 0.15 | 0.14 | 0.14 | 0.18 | 0.18 | 0.16 | 0.18 |
| Children (ref. no children) | | 0.50 * | 0.50 * | 0.50 * | 0.33 | 0.33 | 0.34 | 0.34 |
| Parental education | | −0.17 | −0.18 | −0.18 | −0.06 | −0.08 | −0.09 | −0.08 |
| Graduation 2010 (ref. 2009) | | 0.42 * | 0.41 * | 0.42 * | 0.36 * | 0.36 * | 0.37 * | 0.35 * |
| Graduation 2011 (ref. 2009) | | 0.64 * | 0.63 * | 0.64 * | 0.57 * | 0.55 * | 0.57 * | 0.56 * |
| Graduation 2012 (ref. 2009) | | 1.13 ** | 1.14 ** | 1.13 ** | 1.08 ** | 1.07 ** | 1.09 ** | 1.07 ** |
| Graduation 2013 (ref. 2009) | | 1.96 ** | 1.97 ** | 1.97 ** | 1.97 ** | 1.94 ** | 1.96 ** | 1.95 ** |
| *Ethnicity* (ref. ethnic Bulgar.) | | | | | | | | |
| Roma | | | | | 1.34 ** | 2.62 ** | −0.24 | 2.23 ** |
| Turks | | | | | 0.64 | 1.35 | −2.46 * | 0.14 |
| Other | | | | | 0.17 | 0.17 | −0.03 | 0.11 |
| *Cross-level interactions* | | | | | | | | |
| Roma # Urbanization | | | | | | −0.02 | | |
| Turks # Urbanization | | | | | | −0.01 | | |
| Other # Urbanization | | | | | | 0.00 | | |
| Roma #Unemployment | | | | | | | 0.12 ** | |
| Turks # Unemployment | | | | | | | 0.20 ** | |
| Other # Unemployment | | | | | | | 0.01 | |
| Roma # Service Sector | | | | | | | | −0.02 |
| Turks # Service Sector | | | | | | | | 0.01 |
| Other # Service Sector | | | | | | | | 0.00 |
| Variance [Region] | 0.75 ** | 0.65 ** | 0.60 ** | 0.82 ** | 0.50 ** | 0.51 ** | 0.49 * | 0.51 ** |
| *Model statistics* | | | | | | | | |
| N | 1719 | 1719 | 1719 | 1719 | 1719 | 1719 | 1719 | 1719 |
| N_clust | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| LL | −1053.40 | −918.65 | −917.66 | −921.05 | −894.01 | −893.22 | −885.23 | −893.31 |
| AIC | 2110.80 | 1867.30 | 1865.32 | 1872.10 | 1828.03 | 1832.45 | 1816.45 | 1832.63 |
| BIC | 2121.70 | 1949.04 | 1947.06 | 1953.84 | 1937.02 | 1957.79 | 1941.79 | 1957.97 |
| ICC | 0.19 | 0.16 | 0.15 | 0.20 | 0.13 | 0.13 | 0.13 | 0.13 |

Model statistics: Number of observations (N); number of clusters (N_clust); log pseudolikelihood (LL); Akaike's Information Criteria (AIC); Bayesian Information Criteria (BIC); intraclass correlation (ICC); + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$; Source: BSLS 2014.

## References

1. Brauns, H.; Gangl, M.; Scherer, S. Education and unemployment: Patterns of labour market entry in France, the United Kingdom and West Germany. In *Arbeitspapiere Nr. 6*; Mannheimer Zentrum für Europäische Sozialforschung: Mannheim, Germany, 1999.
2. De Lange, M.; Gesthuizen, M.; Wolbers, M.H. Youth labour market integration across Europe: The impact of cyclical, structural, and institutional characteristics. *Eur. Soc.* **2014**, *16*, 194–212.
3. Kogan, I.; Noelke, C.; Gebel, M. Comparative analysis of social transformation, education systems, and school-to-work transitions in central and Eastern Europe. In *Making the Transition. Education and Labor Market Entry in Central and Eastern Europe*; Kogan, I., Noelke, C., Gebel, M., Eds.; Stanford University Press: Stanford, CA, USA, 2011; pp. 320–351.
4. Müller, W. Education and youth integration into European labour markets. *Int. J. Comp. Sociol.* **2005**, *46*, 461–485.
5. Müller, W.; Gangl, M. The transition from school to work: A European perspective. In *Transitions from Education to Work in Europe. The Integration of Youth into EU Labour Markets*; Müller, W., Gangl, M., Eds.; Oxford University Press: Oxford, UK, 2003; pp. 1–22.
6. Wolbers, M.H. Patterns of labour market entry: A comparative perspective on school-to-work transitions in 11 European countries. *Acta Sociol.* **2007**, *50*, 189–210.
7. Ministry of Regional Development and Public Works (MRDPW). *The National Regional Development Strategy of the Republic of Bulgaria for the Period 2005–2015*; MRDPW: Sofia, Bulgaria, 2005.

8.  Zdravkov, Z. Областни неравенства и образователни шансове в България: сравнителен анализ на данните от Националното външно оценяване (Provincial inequalities and educational chances in Bulgaria: Comparative analysis on the results from the National External Examination). *Sociol. Probl.* **2019**, *51*, 530–556.

9.  Draganova, M. Restructuring of rural areas in Bulgaria: From old disparities to new development challenges. *Sociol. Probl. Spec. Issue* **2006**, *38*, 170–189.

10. Stoilova, R. Social selectivity of educational attainment in Bulgaria. The role of tuition fees and student loans for the reproduction of social origin in higher education. *Sociol. Probl.* **2010**, *1*, 32–63.

11. Ilieva-Trichkova, P.; Stoilova, R.; Boyadjieva, B. Regional gender differences in vocational education in Bulgaria. *Comp. Soc. Res.* **2015**, *31*, 151–180.

12. Heiniger, M.; Imdorf, C. The role of vocational education in the transmission of gender segregation from education to employment: Switzerland and Bulgaria compared. *J. Labour Mark. Res.* **2018**, *52*, 15. [PubMed]

13. Cedefop. *Vocational Education and Training in Bulgaria: Short Description*; Publications Office of the European Union: Luxembourg, 2018.

14. Kostova, D. Bulgaria. In *Europe Enlarged. A Handbook of Education, Labour and Welfare Regimes in Central and Eastern Europe*; Kogan, I., Gebel, M., Noelke, C., Eds.; The Policy Press: Bristol, UK, 2008; pp. 97–122.

15. Council of Ministers. *National Strategic Reference Framework Republic of Bulgaria, Programming period 2007–2013*; European Commission: Brussels, Belgium, 2007.

16. Imdorf, C.; Shi, P.L.; Sacchi, S.; Samuel, R.; Hyggen, C.; Stoilova, R.; Yordanova, G.; Boyadjieva, P.; Ilieva-Trichkova, P.; Parsanoglou, D.; et al. Scars of early job insecurity across Europe: Insights from a multi-country employer study. In *Youth Unemployment and Job Insecurity in Europe: Problems, Risk Factors and Policies*; Hvinden, B., Hyggen, C., Sirovátka, T., Schøyen, M.A., Eds.; Edward Elgar Publishing: Cheltenham, UK, 2019; pp. 93–116.

17. Trentini, C. Ethnic patterns of returns to education in Bulgaria. Do minorities have an incentive to invest in education? *Econ. Transit.* **2014**, *22*, 105–137.

18. Katsarska, K.; Monova, M. Mechanisms of exclusion and coping strategies in the professional realization of young Roma. *Pap. BAS Humanit. Soc. Sci.* **2018**, *5*, 90–103.

19. Open Society Institute—Sofia Bulgarian Helsinki Committee. *Schooling of Ethnic Minorities in Bulgaria*; Analytical Report PHARE RAXEN_CC—Minority Education; RAXEN_CC National Focal Point Bulgaria: Vienna, Austria, 2014.

20. Milenkova, V.; Hristova, S. Is there any light in the tunnel? On the drawbacks of Roma educational integration in Bulgaria. *Eur. Q. Political Attitudes Ment.* **2017**, *6*, 1.

21. Maurice, M.; Sellier, F.; Silvestre, J.-J. *The Social Foundations of Industrial Power: A Comparison of France and Germany*; MIT Press: Cambridge, MA, USA, 1986.

22. Rokicka, M.; Unt, M.; Taht, K.; Nizalova, O. Youth labour market in Central and Eastern Europe. In *European Youth Labour Markets: Problems and Policies*; Malo, M.A., Mínguez, A.M., Eds.; Springer International Publishing: Cham, Switzerland, 2018; pp. 61–78.

23. Boyadjieva, P.; Ilieva-Trichkova, P. Horizontal differentiation matters: Moderating influence of the type of upper secondary education on students' transitions. *Eur. Educ.* **2019**, *51*, 32–50.

24. Imdorf, C.; Bieri, F.; Heiniger, M. Gender segregation in education and employment. The role of educational systems in Bulgaria and Switzerland. In *Inequalities and Social (Dis) Integration: In Search of Togetherness*; Boyadjieva, P., Kanoushev, M., Ivanov, M.J., Eds.; Istok: Sofia, Bulgaria, 2018; pp. 331–345.

25. Stefanova, T.A. Regional distribution of vocational secondary and higher education schools in Bulgaria. *Procedia—Soc. Behav. Sci.* **2014**, *120*, 53–65.

26. Boyadjieva, P.; Ilieva-Trichkova, P. Higher education systems and institutions, Bulgaria. In *Encyclopedia of International Higher Education Systems and Institutions*; Teixeira, P., Shin, J., Eds.; Springer: Dordrecht, The Netherlands, 2018. [CrossRef]

27. EP-Nuffic. *The Bulgarian Education System Described and Compared with the Dutch System*; Nuffic: The Hague, The Netherlands, 2011.

28. Milenkova, V.; Kovacheva, S. *Regional Insights to Lifelong Learning Policies in Support of Young Adults in Bulgaria*; Avangard Prima: Sofia, Bulgaria, 2020.

29. Apostolov, G.; Milenkova, V. The skills system of young adults in Bulgarian context. *Balk. Forum* **2018**, *1*, 256–266.

30. Dimitrov, P. Modelling involuntary part-time and fixed-term employment among young people and adults in Bulgaria. *Econ. Arch.* **2017**, *70*, 56–68.

31. Ministry of Regional Development and Public Works (MRDPW). *National Regional Development Strategy (NRDS) of the Republic of Bulgaria for the Period 2012–2022*; MRDPW: Sofia, Bulgaria, 2012.

32. Stoilova, R.; Staneva, M. The middle class in Bulgaria. In *No Robots: The Position of Middle-Class Households in Nine European Countries*; Siegmann, A., Schäfer, M., Eds.; Nieuwe Haagsche: Rijswijk, The Netherlands, 2018; pp. 25–45.

33. Hermansen, M. Reducing regional disparities for inclusive growth in Bulgaria. In *OECD Economics Department Working Papers, 1663*; OECD Publishing: Paris, France, 2021. [CrossRef]

34. National Statistical Institute. Преброяване на Населението и Жилищния фонд през 2011. Том 1 Население, Книга 2 Демографски и Социални Характеристики (*Population and Housing Census 2011, Volume 1 Population, Book 2 Demographic and Social Characteristics*); Bulget: Sofia, Bulgaria, 2012.

35. National Statistical Institute. Образование в Република България *2011 (Education in the Republic of Bulgaria 2011)*; National Statistical Institute: Sofia, Bulgaria, 2011.

36. Ilieva-Trichkova, P.; Boyadjieva, P. Dynamics of inequalities in access to higher education: Bulgaria in a comparative perspective. *Eur. J. High. Educ.* **2014**, *4*, 97–117.

37. Ravnachka, A.; Kazakov, B.; Ilieva, N.; Asenov, K. School segregation of the Roma ethnic group: A case study of Harman Mahala Roma quarter, Plovdiv. In *Smart Geography. Key Challenges in Geography (EUROGEO Book Series)*; Nedkov, S., Zhelezov, G., Ilieva, N., Nikolova, M., Koulov, B., Naydenov, K., Dimitrov, S., Eds.; Springer: Cham, Switzerland, 2020; pp. 201–216.

38. Stoilova, R.; Dimitrova, E. Emigration from the perspective of the school-to-work transition in Bulgaria. *Czech Sociol. Rev.* **2017**, *53*, 903–933.

39. Stoilova, R. An intersectional approach to educational inequalities. *Crit. Humanism J.* **2022**. *Manuscript accepted for publishing*.

40. Shavit, Y.; Müller, W. Vocational secondary education, tracking, and social stratification. In *Handbook of the Sociology of Education*; Hallinan, M.T., Ed.; Springer: Boston, MA, USA, 2000; pp. 437–452.

41. Buchmann, M.C.; Kriesi, I. Transition to adulthood in Europe. *Annu. Rev. Sociol.* **2011**, *37*, 481–503.

42. Raffe, D. Explaining national differences in education-work transitions. *Eur. Soc.* **2014**, *16*, 175–193.

43. Kogan, I.; Unt, M. The role of vocational specificity of educational credentials for labour market entry in Estonia and Slovenia. *Int. Sociol.* **2008**, *23*, 389–416.

44. Baranowska, A.; Gebel, M.; Kotowska, I.E. The role of fixed-term contracts at labour market entry in Poland: Stepping stones, screening devices, traps or search subsidies? *Work Employ. Soc.* **2011**, *25*, 777–793.

45. Imdorf, C.; Pohlig, M.; Zander, L. Recruiters' valuation of young people's employment insecurities in Bulgaria and Switzerland: Making sense of previous job-hopping and unemployment in the hiring process. In *School-to-Work Transition in a Comparative Perspective*; Buttler, D., Ławrynowicz, M., Michoń, P., Eds.; Edward Elgar Publishing: Cheltenham, UK, Manuscript in preparation.

46. Spence, M. Job market signaling. *Q. J. Econ.* **1973**, *87*, 355–374.

47. Kleinert, C.; Vosseler, A.; Blien, U. Classifying vocational training markets. *Ann. Reg. Sci.* **2018**, *61*, 31–48.

48. Hillmert, S.; Hartung, A.; Weßling, K. A Decomposition of local labour-market conditions and their relevance for inequalities in transitions to vocational Training. *Eur. Sociol. Rev.* **2017**, *33*, 534–550.

49. Muja, A.; Blommaert, L.; Gesthuizen, M.; Wolbers, M. The vocational impact of educational programs on youth labor market integration. *Res. Soc. Stratif. Mobil.* **2019**, *64*, 1–18.

50. Thurow, L.C. Education and economic equality. *Public Interest* **1972**, *28*, 66–81.

51. Thurow, L.C. *Generating Inequality*; Basic books: New York, NY, USA, 1975.

52. O'Higgins, N.; Ivanov, A. Education and employment opportunities for the Roma. *Comp. Econ. Stud.* **2006**, *48*, 6–19.

53. Imdorf, C. Understanding discrimination in hiring apprentices: How training companies use ethnicity to avoid organisational trouble. *J. Vocat. Educ. Train.* **2017**, *69*, 405–423.

54. Spalter-Roth, R. Race and ethnicity in the labor market: Employer practices and worker strategies. In *Handbook of the Sociology of Racial and Ethnic Relations*; Hernán, V., Feagin, J.R., Eds.; Springer: Boston, MA, USA, 2007; pp. 263–283.

55. Pastore, F.; Quintano, C.; Rocca, A. *Stuck at a Crossroads? The Duration of the Italian School-To-Work Transition*; IZA Discussion Papers, No. 13462; Institute of Labor Economics (IZA): Bonn, Germany, 2020.

56. Carlsson, M.; Fumarco, L.; Rooth, D.-O. Ethnic discrimination in hiring, labour market tightness and the business cycle—Evidence from field experiments. *Appl. Econ.* **2018**, *50*, 2652–2663.

57. Baert, S.; Cockx, B.; Gheyle, N.; Vandamme, C. Is there less discrimination in occupations where recruitment is difficult? *ILR Rev.* **2015**, *68*, 467–500.

58. Imdorf, C.; Stoilova, R. *Bulgarian School Leaver Survey 2014*; [Dataset]; FORS: Lausanne, Switzerland, 2014. [CrossRef]

59. Ritschard, G.; Bussi, M.; O'Reilly, J. An Index of precarity for measuring early employment Insecurity. In *Sequence Analysis and Related Approaches*; Ritschard, G., Studer, M., Eds.; Springer Open: Cham, Switzerland, 2018; pp. 279–295.

60. Rabe-Hesketh, S.; Skrondal, A. *Multilevel and Longitudinal Modeling Using Stata*, 3rd ed.; Stata Press: College Station, TX, USA, 2012.

61. Furlong, A.; Biggart, A.; Cartmel, F. Neighbourhoods, opportunity structures and occupational aspirations. *Sociology* **1996**, *30*, 551–565.

62. Glauser, D.; Becker, R. VET or general education? Effects of regional opportunity structures on educational attainment in German-speaking Switzerland. *Empir. Res. Vocat. Educ. Train.* **2016**, *8*, 8.

63. Wicht, A. Regional contexts in quantitative educational sociology. In *Education, Space and Urban Planning*; Million, A., Heinrich, A.J., Coelen, T., Eds.; Springer International Publishing: Cham, Switzerland, 2017; pp. 299–307.

64. Ilieva, M.I. The Roma minority in the education system of Bulgaria. In *Lifelong Learning and the Roma Minority in Central and Eastern Europe*; Ilieva, M.I., Óhidy, A., Forray, K.R., Eds.; Emerald Publishing Limited: Bingley, NJ, USA, 2019; pp. 27–47.

65. Sixt, M.W. Region und Bildungserfolg. Die strukturelle Dimension bei der Erklärung von regionaler Bildungsungleichheit. In *Bildungskontext*; Becker, R., Schulze, A., Eds.; Springer Fachmedien: Wiesbaden, Germany, 2013; pp. 457–480.