



SKILLS GAP ANALYSIS

in South-West Serbia





International
Labour
Organization

Occupational skills needs in South and South-West Serbia

Galjina Ognjanov

Valli Corbanese



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Introduction

The aim of this report is to analytically review the occupational skills needs of South and South-West Serbia. The analysis is based on the *Occupational Skills Needs Survey* conducted by the Republic Statistical Office (RSO) of Serbia at the end of 2013.

The work of the Statistical Office of Serbia on *establishment surveys* – to identify enterprises' characteristics, activities and workforce requirement practices – started in 2009, with the technical assistance of the International Labour Office (ILO). The research methodology and analytical framework for measuring skills gaps – stemming from the figures of establishment surveys – was reviewed in 2011. Nowadays such establishment surveys: i) encompass both enterprises and unincorporated businesses, ii) classify occupations according to the 2008 International Standard Classification of Occupations (ISCO), iii) apply a job creation/job destruction analytical framework; iv) explore trends in workforce recruitment ; and v) investigate the skills of workers currently employed and the training practices of enterprises.

Against this backdrop, the *European Partnership with Municipalities Programme (EU PROGRES)* decided to identify the occupational skills most demanded in 34 municipalities belonging to ten different districts of South and South-West Serbia with a view to design training programmes to match the skills of individuals with the needs of the local economy as well as the requirements of investors interested in setting up their businesses in these regions. The focus of the research, therefore, was to detect skills shortcoming, identify economic sectors with a potential for growth and explore workforce mobility constraints to inform the design of education and training programmes aligned to labour market requirements.

The report presented below is organized in seven sections. The first section reviews available information on the economic and social context of Southern Serbia. The second section maps existing education and training profiles. Section 3 examines the general characteristics of surveyed incorporated and unincorporated businesses, job creation and job destruction patterns in the recent past (last 12 months) and the near future (next 12 months). Section 4 analyzes trends in workforce recruitments in relation to open vacancies as well as perceived occupational needs in the medium term (three to five years). Section 5 reports the current skills needs of surveyed incorporated and unincorporated businesses and their training practices. Section 6 maps enterprises' cooperation with the National Employment Service (NES) of Serbia. Section 7 of the report concludes and draws a number of policy implications for decision-makers.

1. Overview of the economic and social context in South Serbia

The global economic and financial crisis has severely affected the Serbian labour market. For more than five years now – and despite the policy measures introduced by the Government to mitigate its negative impact on the local economy – the labour market has been characterized by an upward trend in unemployment, with the unemployment rate of the working age population increasing from 14.4 per cent in 2008 to 21 per cent in October 2014.¹ Moreover, inequality among regions and districts has increased considerably.

In particular, the local labour markets in the South and South-West part of Serbia were among the most negatively affected by the current economic slowdown.² In 2011, the average unemployment rate in the region was above the national average (25.7 per cent and 23.6 per cent, respectively). Even more dramatically, the registered unemployment rates in many municipalities of the area exceeded 30 per cent (e.g. 38.2 per cent in Bujanovac, 35.3 per cent in Lebane, 35.2 per cent in Tutin, 34.5 per cent in Bojnik, 32.1 per cent in Novi Pazar, 31.4 per cent in Gadžin Han and 31.3 per cent in Trgovište).³ As a consequence, the municipalities of the region are classified in terms of economic development in the third (60-80 per cent of the national average) and fourth (below 60 per cent of the national average) group, with most of them considered “devastated” areas (i.e. with development below 50% of the national average).⁴

The poor labour market situation of South and South-West Serbia, compared to the national average, is confirmed by the figures on unemployment levels and average wages. In 2012, the number of unemployed per thousand inhabitants in most of the above-mentioned municipalities was well beyond the national average (105 individuals): for instance Lebane had 239 unemployed individuals per thousand inhabitants, Tutin 237, Trgoviste 225, Bojnik 221, Novi Pazar 203, Sjenica 194, Presevo 193, Priboj 191, Vladicin Han 189, Gadzin Han 179 and Merosina 170.⁵ High unemployment has been typically followed by lower wages compared to the national average. Available data show that in 2013 the average net salary in the country was RSD 43,312 (approximately €378).⁶ In the same period average net wages in South and South-West Serbia ranged from a low of RSD 26,176 in Priboj (i.e. 60.4 per cent of the national average) to a high of RSD 39,564 (i.e. 91.3 per cent of the national average) in Presevo.

1 Republic Statistical Office of Serbia (RSO), *Labour Force Survey*, available at <http://webrzs.stat.gov.rs/Web-Site/Public/PageView.aspx?pKey=26>

2 For the purposes of this report, South and South-West Serbia include 10 out of 29 districts recognized by the administrative division of the Republic of Serbia (*Law on Territorial Organization and Local Self Government*), namely: Zajecarski, Zlatiborski, Moravicki, Raski, Rasinski, Nisavski, Toplicki, Pirotski, Jablanicki and Pcinjski.

3 Within the 10 above-mentioned districts, 34 municipalities were covered by the *Occupational Skills Needs Survey* (Novi Pazar, Tutin, Raška, Sjenica, Ivanjica, Priboj, Prijepolje, Nova Varoš, Prokuplje, Blace, Žitorađa, Kuršumljija, Leskovac, Lebane, Bojnik, Medveđa, Surdulica, Vlasotince, Bosilegrad, Vranje, Trgovište, Presevo, Bujanovac, Vladicin Han, Crna Trava, Brus, Aleksinac, Merošina, Gadžin Han, Doljevac, Babušnica, Bela Palanka, Knjaževac, and Svrlijig). National Employment Service (NES), *Monthly report, September 2012*, Belgrade, October 2012.

4 The municipalities classified as “devastated” areas are Babušnica, Bela Palanka, Blace, Bojnik, Bosilegrad, Bujanovac, Vladicin Han, Vlasotince, Gadžin Han, Doljevac, Žitorađa, Kuršumljija, Lebane, Medveđa, Merošina, Presevo, Svrlijig, Sjenica, Trgovište, Tutin and Crna Trava.

5 Republic Statistical Office of Serbia (RSO), *Opštine i regioni u Republici Srbiji*, (Municipalities and Districts in Serbia), Belgrade 2013.

6 Republic Statistical Office of Serbia (RSO), *Average wages in local municipalities and cities*, Belgrade, November 2013.

The high poverty rates and social distress in the region are deeply rooted in high unemployment and the poor perspectives in the local labour markets. Unemployment is particularly widespread among the most vulnerable groups of the Serbian population, such as young people (15-24 years old), older workers (55 years old and over), Roma groups, refugees, internally displaced persons, persons with disabilities, single parents and social assistance beneficiaries.⁷ In addition, the low employability of the labour force in South and South-West Serbia is also due to low qualifications levels and lack of skills demanded in the labour market. Many of the local municipalities in the area show shares of unemployed individuals without qualifications that are well beyond the Serbian average of 32.2 per cent.⁸ The most extreme cases are found in Presevo, where 63.2 per cent of the unemployed are without qualifications, followed by Bujanovac and Tutin (59.5 per cent each), Crna Trava (53.5 per cent), Medvedja (52 per cent), Novi Pazar (50.9 per cent), Zitoradja (48 per cent), Bojnik (47.9 per cent) and Sjenica (47 per cent).

The educational attainment of the population in South and South-West Serbia is the lowest in the country. The share of population (15 year old and above) without qualifications accounts for 59.3 per cent in Novi Pazar, Tutin and Sjenica and 58.6 per cent in Vranje, Presevo, Bujanovac and Vladicin Han, nearly twice the share of the population without qualifications found in the more developed Northern Serbia (31 per cent).⁹ At the same time, the share of population in the South with secondary and tertiary educational attainment is much lower than that recorded in the North of the country (51 per cent and 17 per cent, respectively). For instance, in Novi Pazar, Tutin and Sjenica, the share of the population (15 years old and above) with secondary and tertiary educational attainment is 31.8 per cent and 3.4 per cent, while in Vranje, Presevo, Bujanovac and Vladicin Han is 27.7 per cent and 6.8 per cent.

The strong positive relationship between an individual's education and skills level and labour market outcomes – both in terms of employment and wage premium – is well recognized in Serbia.¹⁰ Typically, individuals with low skills levels are more likely to be unemployed and experience long unemployment spells, to be inactive or engaged in the informal economy compared to individuals with higher qualifications. Moreover, the fast-changing labour market needs for particular skills calls for a better understanding of the mismatch between the demand and supply of certain competencies and occupational skills.

To date, a number of establishment surveys have been conducted by the Republican Statistical Office of Serbia (*Occupational Skills Needs Surveys* in 2009 and 2011) and the National Employment Service (*Employers' Survey in 2012 and 2013*) with the aim to gain a better understanding of the workforce requirements of local enterprises.

7 Republic Statistical Office of Serbia (RSO), Labour Force Survey, November 2011

8 Republic Statistical Office of Serbia (RSO), *Opštine i regioni u Republici Srbiji*, (Municipalities and Districts in Serbia), op.cit.

9 Ognjanov, G., Izvestaj o stanju i perspektivama lokalnih trzista rada na podrucjima medjuopstinske saradnje, (Report on current state and perspectives of local labor markets in inter-municipal co-operation areas), USAID Srbija i Nacionalna sluzba za zaposljavanje, Beograd, 2012

10 See Krstic G., Corbanese V., *In search of more and better jobs for young people in Serbia*, International Labour Office, Budapest, 2009; Arandarenko, M. and A. Nojkovic, *The impact of global economic and financial crisis on youth employment in the Western Balkans*, ILO, Geneva, mimeo, 2009 and more recently Foundation for the Advancement of Economics and ILO, Impact evaluation of active labour market programmes targeting disadvantaged youth in Serbia. Key findings, ILO, Budapest, 2014.

Although based on different survey instruments and sampling frames, these surveys shed light on job creation and destruction, current and future occupational skills needs as well as trends in workforce recruitment and in-company training practices. The most important findings of these establishment surveys point to large mismatches between the current and prospective labour market needs and the limited capacity of the Serbian education system to meet those needs. Various attempts have been made by the National Employment Service (NES), with the support of many technical cooperation projects, to open a dialogue among all interested parties, including education institutions (both formal and informal), employers and labour market institutions (NES, local employment councils, employers' and workers' organizations), governmental institutions, local administrations and civil society organizations. The aim is to create an environment where education and training services are better able to serve the needs of the local labour market.

2. Existing secondary and tertiary education profiles

Secondary education in Serbia is provided through grammar schools, vocational schools, mixed grammar and vocational schools, art schools, as well as secondary schools for adult education and secondary schools for pupils with special needs. In the academic year 2012/13, secondary education was provided in 494 schools, with 258 of these schools being located in South Serbia.¹¹

Apart from grammar schools, which offer general education and prepare students for education at the tertiary level, most secondary schools in Serbia provide the qualifications for a number of occupations. These schools offer various profiles grouped in eight different occupational areas: 1) personal and social care services, 2) working with plants and animals, 3) business and business-related services, 4) culture, arts and media, 5) technical practices, 6) technological practices, 7) defence, security and protection, and 8) crafts. The various educational profiles that are available are listed in the *Guide to Career Choices*, developed and used by the NES to provide career information to secondary school students.¹²

In general, the available profiles appear to be in line with the needs of the local labour market. However, the education system in Serbia faces a number of challenges in improving its link with world of work, namely: (i) the education system is not flexible enough to address changing labour markets needs in the short run; (ii) most vocational schools are inadequately equipped and this does not allow the teaching staff to help students develop the practical skills required by an occupation; and (iii) there is a general lack of interest of students in the occupations that are required at local

11 Republic Statistical Office of Serbia (RSO), Education figures, available online at <http://webzrs.stat.gov.rs/WebSite/Public/PageView.aspx?pKey=126>

12 This tool was developed with the support of the ILO through a technical cooperation project implemented in South Serbia jointly with a number of United Nations agencies (PBUILD). The tool is available (in Serbian language only) at: http://www.vodiczaosnovce.nsz.gov.rs/pdf/vodic_zajbor_zanimanja.pdf

level. One of the most pressing problems relates to crafts; many local employers find it difficult to find masons, carpenters, welders, woodworkers, roofers, glass cutters, ceramists and tailors. In 2013, as many as 120 sections were discontinued due to the lack of interest of secondary students for the profiles on offer.¹³

Tertiary education in the country is available in eight state universities and in eleven accredited private universities. University education is available at three levels, i.e. bachelor, master and doctoral studies. In addition to universities, tertiary education is provided through a number of high schools offering both academic and professional studies and leading to a tertiary education degree.¹⁴ High schools in Serbia offer numerous educational profiles geared to prepare students to perform the tasks of various occupations. State universities offer education in various scientific fields, including social sciences and humanities, natural sciences, technology, drama and arts. Private universities offer mostly educational profiles in the field of economics, business, communications and technology, i.e. those areas most demanded by students. This demand for certain educational profiles is grounded in the belief that it is easier to find a job in the local labour market if one has managerial, entrepreneurial and other business-related skills. Paradoxically, however, management and economics are the most recurrent occupations among individuals registered as unemployed with the NES.

The provision of tertiary education services in Serbia is aligned to the principles of the Bologna Declaration, i.e. the aim of this education stream is to provide students with the competencies and skills needed for their professional career. The lack of a national qualifications framework is possibly one of the obstacles in the design of educational programmes able to provide specific job-related competencies and skills. However, the most pressing problem remains the capacity of education institutions to provide students with practical skills and job-related experience. As the findings of various employers' surveys show, students mostly lack practical skills that may be acquired through internships in enterprises, but also through simulations, case studies and other type of practical work. In addition, students generally lack core employability skills, e.g. problem-solving, team work, communication, decision-making and learning-to-learn.

13 Life Long Learning Programme (Matchdo), Situation analysis on the state of formal and non-formal education, unemployment and economic trends in the Republic of Serbia in 2013, Subotica, 2013, available at: <http://matchdo.rs/docs/Situation-Analysis.pdf>

14 A comprehensive list of accredited universities and high schools in Serbia is provided in the document prepared by the Committee for Accreditation and quality Assurance, *Guide to accredited educational programmes in tertiary educational institutions in Serbia* (in Serbian language only), available at: <http://www.prijemniispiti.com/wp-content/uploads/akreditovani-fakulteti-i-visoke-skole-23-11-2012.pdf>



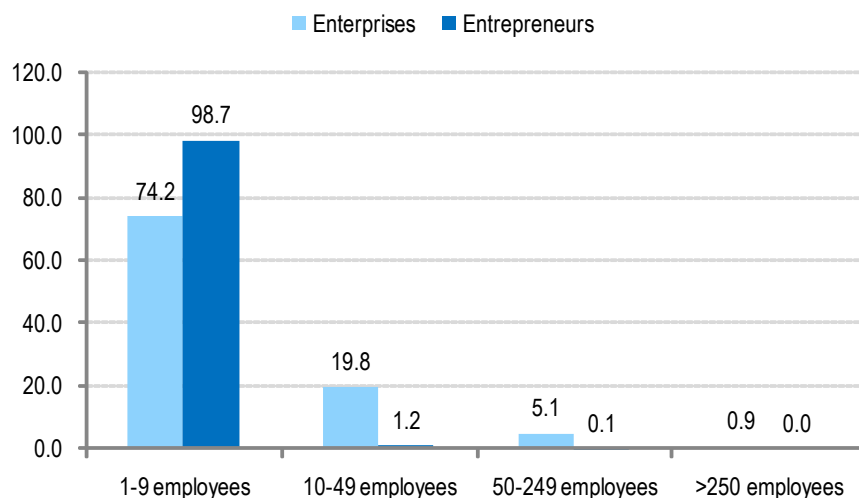
3. General characteristics of surveyed enterprises and entrepreneurs

Surveyed enterprises and entrepreneurs in the ten districts of South and South-West Serbia included mostly privately-owned establishments (91.3 per cent and 98.7 per cent, respectively). The sample of enterprises comprised also 5.6 per cent of public and state-owned enterprises as well as 1.9 per cent of socially-owned companies (see Figure A1, in the Statistical Annex). Such a structure is generally in line with the ownership structure of enterprises and entrepreneurs found at national level. Similarly, the structure of surveyed enterprises and entrepreneurs by economic sectors (as defined in accordance with the Statistical Classification of Economic Activities, NACE rev. 2) highly resembles the overall structure of Serbian economy, with *Manufacturing* and *Wholesales and retail trade; repair of motor vehicles and motorcycles* being the two prevailing economic sectors both in terms of number of business entities and of employees. The other most represented economic sectors among enterprises in South and South-West Serbia (in descending order) are: *Construction, Transportation and storage, Professional, scientific and technical activities, Administrative and support service activities* and *Agriculture, forestry and fishing* (see Figure A2 in the Statistical Annex). Among unincorporated businesses, the most represented sectors – aside manufacturing and trade – are *Transportation and storage, Construction, Administrative and support service activities, Other Services* and, to a lesser extent, *Agriculture, forestry and fishing* (see Figure A3, in the Statistical Annex).

The differences in the economic structure among the 10 districts are pronounced. For instance, *Wholesale and retail trade* is the prevailing economic sector in the Raska district, while in Zajecarski *Agriculture* and *Construction* is the most common economic activity and the Nisavski and Toplicki districts see a prevalence of manufacturing businesses. *Construction* is highly represented among both enterprises and entrepreneurs in the Zlatiborski district and among entrepreneurs in the Rasinski district.

The overwhelming majority of enterprises and entrepreneurs employ from one to nine employees (micro-businesses), without noticeable differences among the districts (Figure 1).

Figure 1: Enterprises and entrepreneurs by class size (%)



Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

The data disaggregated by districts show that small and medium-size enterprises are mostly concentrated in the districts of Pirotski, Zlatiborski and Zajecarski and large enterprises in the districts of Moravicki, Zlatiborski and Jablanicki. Small unincorporated business entities (10-49 employees) are present only in the districts of Zajecarski and Toplicki (8.3 per cent and 5 per cent of all unincorporated firms, respectively), while medium-size business entities account for 5.6 per cent of surveyed unincorporated firms and only in the Rasinski district.

Most surveyed enterprises and unincorporated businesses have been in operations for more than five years (78.1 per cent and 55.1 per cent, respectively), followed by those that had been opened from two to five years (14.9 per cent and 25.9 per cent, respectively). There are considerably less new start-ups (i.e. businesses that had been in operations for less than 12 months) among enterprises (0.1 per cent of the total) than among entrepreneurs (2.9 per cent), in line with the general trend found at national level.

3.1. Job creation and job destruction

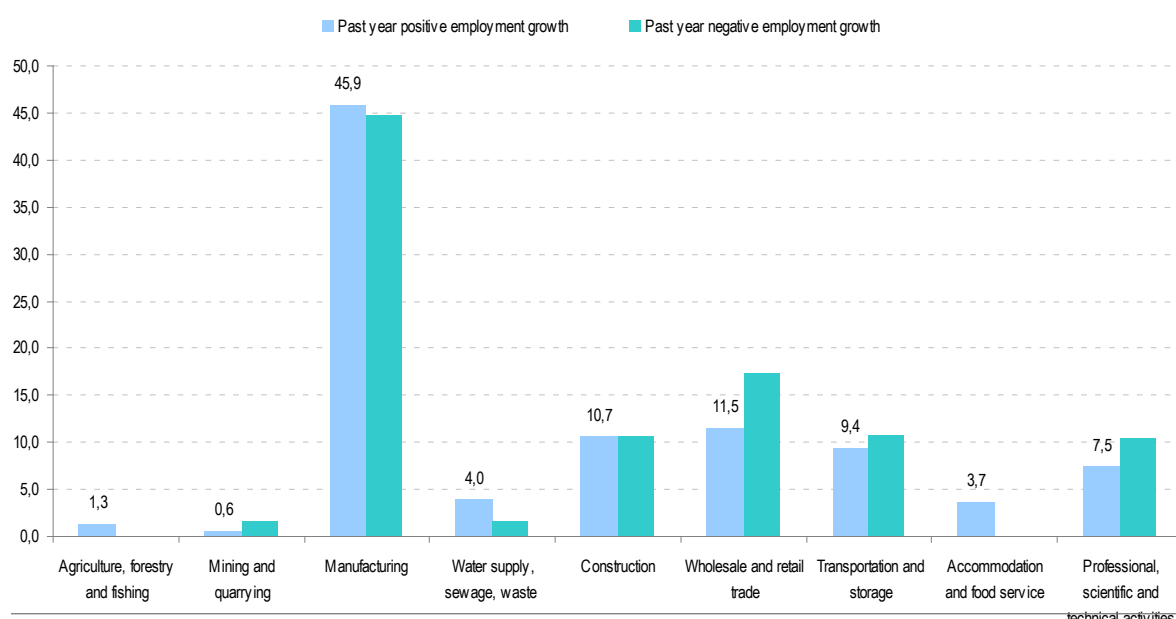
The *Occupational Skills Needs Survey* was also designed to measure job creation and job destruction to better understand the functioning of local labour markets. The following paragraphs present job creation and job destruction among enterprises and entrepreneurs in South and South West Serbia in the year preceding and the year following the survey date (November 2013). The results allow drawing conclusions on the economic situation faced by local employers and examining their expectations in the short run.

3.1.1. Job creation and job destruction in the past year

The data of the *Occupational Skills Survey* conducted in South and South West Serbia reveal that job creation was largest among enterprises operating in the *Manufacturing; Wholesale and retail trade; and Construction* sectors, while job destruction

prevailed in *Wholesale and retail trade, Transportation and storage* and also *Construction*. A comparison of enterprises creating and destroying jobs show a rather equal distribution within separate economic sectors. Positive employment growth was recorded among enterprises in *Agriculture, forestry and fishing; Manufacturing; Water supply, sewerage, waste management*. Conversely, enterprises in *Wholesales and retail trade; Transportation and storage; Professional scientific and technical activities* and *Mining and quarrying* predominantly shed jobs (see Figure 2)

Figure 2: Enterprises creating and shedding jobs in the past year, by economic sectors



Source: Republic Statistical Office of Serbia, *Occupational Skills Needs Survey*, Belgrade, 2013

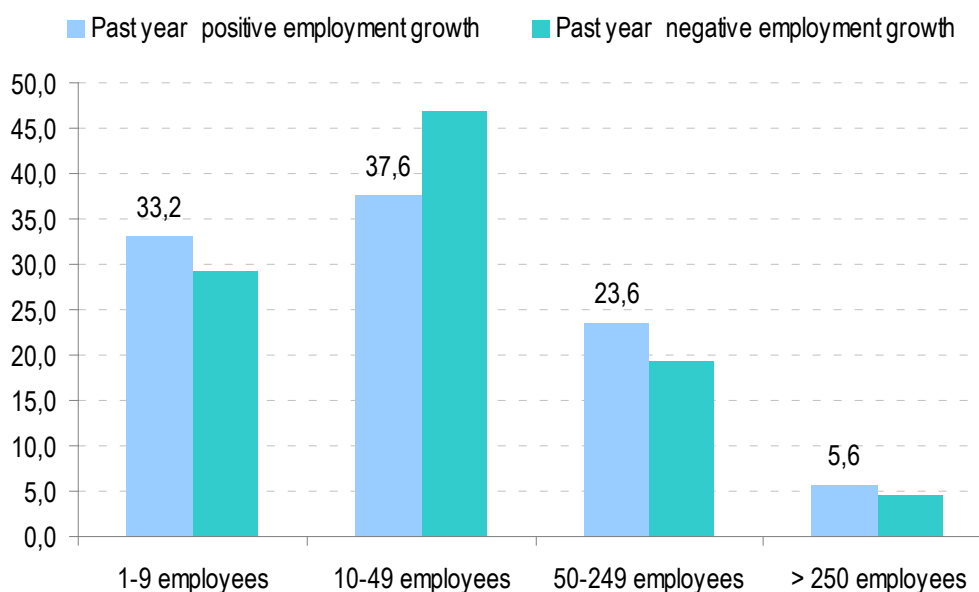
At the districts level, an above average share of enterprises with positive employment growth in *Manufacturing* (45.9 per cent) were recorded in Zajecarski (100 per cent), Rasinski (100 per cent), Moravicki (69 per cent), Nisavski (66 per cent) and Pcinjski (54 per cent). In *Wholesale and retail trade* above average (11.5 per cent) share of enterprises with positive employment growth was notable in the Jablanicki (34.6 per cent) and Raski (21.5 per cent) districts. In the *Construction* sector the average share of enterprises with positive employment growth represents 10.7 per cent of the total. The districts with above-average share were Pirotski (62.4 per cent), followed by Raski (15.4 per cent), Toplicki (13.8 per cent) and Pcinjski (13.1 per cent).

Job destruction by economic sectors and districts shows a slightly different picture. Above-average job destruction in the *Manufacturing* sector (44.9 per cent) was recorded in six districts, namely Zajecarski and Pirotski (100 per cent each), Nisavski (72.6 per cent), Zlatiborski (69.1 per cent), Moravicki (57.2 per cent) and Raski (49.6 per cent). In *Wholesales and retail trade* job destruction was particularly high in Toplicki (50 per cent), Pcinjski (28.7 per cent) and Moravicki (28 per cent), while in Nisavski and Raski it was the lowest (8 and 11.4 per cent, respectively). For *Construction*, negative employment growth was especially experienced in the Jablanicki (40.9 per cent) and Pcinjski (7 per cent) districts.

To summarize, enterprises performing well in the past year belonged to different economic sectors in each of the ten districts, i.e. *Manufacturing* in Nisavski and Moravicki, *Wholesales and retail trade* in Raski and Jablanicki, and *Construction* in Pirotski, Raski and Toplicki.

Based on enterprise size class, micro, medium and large size businesses recorded positive net employment growth, while small-sized companies had negative employment growth (Figure 3)

Figure 3: Enterprises creating and shedding jobs in the past year, by size



Source: Republic Statistical Office of Serbia, *Occupational Skills Needs Survey*, Belgrade, 2013

Again, there are significant differences among districts: positive employment growth was recorded particularly among small companies in the Pirotski (80.2 per cent) and Moravicki (62.2 per cent) district, while negative employment growth dominated among micro enterprises (66 per cent) in the Pirotski district.

The occupation that created and shed most jobs among both enterprises and entrepreneurs in the past year was *Shop sales assistant* (see Table A1, in the Statistical annex). In both type of businesses, the net effect was slightly higher for job creation. Local enterprises recorded more job destruction than creation for *Heavy truck and lorry drivers*, as well as for *Accounting associate professionals* and *Sewing, embroidery and related workers*. Conversely, job creation was higher for *Commercial sales representatives* and *Motor vehicle mechanics and repairers*. Among unincorporated businesses, higher levels of recruitment were recorded for *Waiters* as well as *Bricklayers and related workers*. Aside these latter occupations, job creation was highest for: *Accounting associate professionals*, *Stock clerks*, *Heavy truck and lorry drivers*, *Sales workers* (not elsewhere classified), *Sewing, embroidery and related workers*, *Wood treatment workers* and *Tailors, dressmakers, furriers and hatters*. Job destruction was highest for: *Motor vehicle mechanics and repairers*, *Freight handlers*, *Cleaners and helpers* (offices, hotels and other establishments), *Bakers, pastry-cooks and confectionery makers*, *Cabinet-makers and related workers*, *Civil engineering technicians*, *Data entry clerks*, *Carpenters and joiners*, *Photographic products machine operators*.

The differences among districts are marked. However, *Heavy truck and lorry drivers* (with an exception of the Pirotski district) and *Shop sales assistants* (the exceptions being the Moravicki and Pirotski districts) are the only common occupations shedding jobs in enterprises. Occupations recording the highest number of dismissals (15 and over) by districts were *Administrative and executive secretaries* (Zajecarski), *Sewing, embroidery and related workers* (Zlatiborski), *Heavy truck and lorry drivers* (Moravicki and Nisavski), and *Shop sales assistants* (Nisavski). Similarly, common job-creating occupations are *Heavy truck and lorry drivers* (the exceptions being the Pirotski and Zajecarski districts) and *Shop sales assistants* (without exceptions). Occupations with the highest number of recruitments (15 and over) by districts were *Motor vehicle mechanics and repairers, Car, taxi and van drivers; and Economists* (Zlatiborski), *Heavy truck and lorry drivers* (Moravicki and Zlatiborski), *Shop sales assistants* (Nisavski and Toplicki), *Environmental engineers* (Nisavski) and *Contract labourer* (Zlatiborski and Toplicki).

Surveyed entrepreneurs appear to have much less in common across regions, as job creating and destruction by occupations has been quite diverse. The only occupation both shedding and creating jobs in common was *Shop sales assistants and Waiters*. By district, the occupations that mostly shed jobs were *Mechanical engineering technicians, Mixed crop growers, and Elementary workers* (Zajecarski); *Accounting and bookkeeping clerks, Hand packers, Bakers, pastry-cooks and confectionery makers, Cleaners and helpers* (Zlatiborski), *Cabinet-makers and related workers* (Moravicki); *Freight handlers, Stock clerks, Toolmakers, Food products machine operators, Sheet metal workers, Sewing, Accounting and bookkeeping clerks, Mechanical machinery assemblers, Messengers, package deliverers and luggage porters* (Nisavski); *Door-to-door salespersons, Sales workers, Mechanical machinery assemblers* (Toplicki).

The occupations that mostly created jobs were *Mechanical engineering technicians and Elementary workers* in the Zajecarski district, *Administrative and executive secretaries, Metal working machine tool setters and operators, Contract labourers and Cooks* in the Zlatiborski district; *Waiters* in both the Zlatiborski and Toplicki districts; *Sewing, embroidery and related workers* in the Zlatiborski and Raski districts; *Heavy truck and lorry drivers* in the Zlatiborski and Nisavski districts; *Bakers, pastry-cooks and confectionery makers* in the Zlatiborski and Pirotski region; *Economists, Pharmaceutical technicians, Metal polishers, wheel grinders and tool sharpeners, Stonemasons, stone cutters, splitters and carvers* in the Raski district; *Accounting professionals, Commercial sales representatives, Hairdressers, Food products machine operators, Sheet metal workers and Freight handlers* in the Nisavski district; *Stock clerks* in the Nisavski and Toplicki districts; *Sales workers and Tailors*, in the Toplicki district; and in the Pirotski district.

Such occupational shifts in the last year point to a demand of core employability skills such as communication (including presentation, negotiations and team-working skills), as well as driving skills. In addition, both enterprises and entrepreneurs expressed specific skills requirements that are analyzed in more details in Section 5 of this report.

3.1.2. Job creation and job destruction next year

Job creation and job destruction in year following the survey was measured on the basis of enterprise and entrepreneurs assessment. In essence, such an assessment reflects the perceptions of employers about the current situation and the perspectives of the local economy in the short run. Based on the data gathered among enterprises, employers seem rather optimistic. Most expect to create new jobs in the year, while only those operating the *Transportation and Storage* sector in the district of Raska expect further job destruction (see Figure 4).

Figure 4: Enterprises creating and shedding jobs in the next year, by economic sectors



Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Positive employment growth is mainly forecasted by enterprises operating in dominant economic sectors such as *Manufacturing and Construction*. However, in other large economic sectors such as *Wholesale and retail trade* and *Transportation and storage* employment growth is expected to be small (3 per cent for trading and nil for transport, respectively). Among other dominant economic sectors in the region it is worth mentioning the relatively high employment growth expected in *Professional, scientific and technical activities* (20.6 per cent) and *Administrative and support service activities* (11.1 per cent). Employment growth in *Manufacturing* is mostly expected in Moravicki district (100 per cent), Pcinjski (82.8 per cent) and Nisavski (75.5 per cent). Positive employment growth in *Construction* is exclusively forecasted in Jablanicki (100 per cent) and Raski (74.8 per cent).

Considerable employment growth (12.6 per cent) is also expected in the *Water supply, sewage and waste management* in the Raski district, activity which is considered key in the local strategy of economic development.¹⁵ Conversely, one of the largest sectors on which many local economies have relied in the past for job growth (i.e. *Wholesale and retail trade*) does not show any prospect for positive employment growth. The only exception is Pcinjski, where 8.6 per cent of local employers expect to recruit additional workforce in this sector.

These figures, however, need to be read with some caution, as they report the individual perception of employers about the future prospects of their enterprise. While the figures may well mean that the economic situation and the labour market are improving, it is also true that employers in the region have been rather optimistic in the past, to be soon contradicted by a harsher reality.¹⁶ Rather, what can be expected is a moderate employment growth in the short term.

Micro size enterprises (61.8 per cent) are those more likely to expect job creation in the next year. In the Jablanicki and Toplicki districts, however, positive employment growth is envisaged only by small and medium size companies, whereas in Moravicki and Nisavski most medium and large size enterprises expect growing number of workers. Enterprises expecting negative employment growth are mostly medium size businesses operating within the *Transportation and storage* sector and based in the Raska district.

In general, both enterprises and entrepreneurs are expecting much more jobs to be created than destroyed as regards the top ten occupations (see Table A2 in the Statistical Annex). The occupations most likely to be creating jobs in enterprises of South and South-West Serbia in the next year are *Shop sales assistants; Heavy truck and lorry drivers, Motor vehicle mechanics and repairers; Sewing and related workers; Economists; Car, taxi and van drivers, Food products machine operators; Driving instructors, Toolmakers, and Chemical engineers*. The list of occupations most likely to be shedding jobs is completely different with only two exceptions: *Shop sales assistants and Chemical engineers* both with positive net employment growth. Therefore, the occupations unlikely to be in-demand in the local labour markets over the next year are: *Chemical processing plant controllers, Cleaners and helpers, Bakers, pastry-cooks and confectionery makers, Personnel clerks, Concrete placers and finishers, Toolmakers, Commercial sales representatives, Sewing and related workers, Carpenters, Contract labourers and Car, taxi and van drivers*.

For entrepreneurs, the lists of the top ten occupations likely to create and shed jobs is different except for *Shop sales assistants and Heavy truck and lorry drivers*, both of which will create a relatively high number of jobs.

15 Ognjanov, G., Report on current state and perspectives of local labor markets in inter-municipal cooperation area of Novi Pazar, November 2013 available through SLPD USAID and NES.

16 The Employers Survey conducted in 2012 by the NES pointed to a widespread optimism among local employers about future prospects, which failed to be confirmed by the data collected one year later. See Ognjanov, G., Izvestaj o stanju i perspektivama lokalnih trzista rada na podrucjima medjuopstinske saradnje, (Report on current state and perspectives of local labor markets in inter-municipal co-operation areas), USAID Srbija i Nacionalna sluzba za zaposljavanje, Beograd, 2012 as well as separate reports for inter-municipal co-operation areas of Novi Pazar, Vranje, Nis and Uzice 2013 (SLPD USAID and NES); Employers Survey 2013 (data extracted for South and South-West Serbia municipalities, available from separate reports on current state and perspectives of local labor markets in inter-municipal co-operation areas of Novi Pazar, Vranje, Nis and Uzice 2013, SLPD USAID and NES).

Other occupations likely to create jobs over the next period include: *Bricklayers, Carpenters, Commercial sales representatives, Building and other related electricians, Woodworking machine tool operators, Cabinet-makers, Cooks and Plastic products machine operators*. Conversely, the occupations most likely to be shedding jobs in the next year are *Shopkeepers, Toolmakers, Accounting and bookkeeping clerks, Contract labourers, Agricultural technicians, Motor vehicle mechanics and repairers, and Metal working machine tool operators*.

The occupations that will be creating considerable numbers of jobs at district level include *Tailors* in Nisavski and *Biologists, botanists, zoologists and related professionals* in Toplicki. Among entrepreneurs, *Waiters, Bakers, Sewing, Photographers, Forestry workers, Wood processing operators and Earthmoving operators* are among the occupation that will be creating most jobs in the Zlatiborski district; *Pharmacists* in the Raski district; *Electrical engineering, Electrical line installers and repairers, Food machine operators, Print finishing and binding, Hairdressers, Vehicle cleaners, Rubber products machine operators and Mechanical machinery assemblers* in the Nisavski district; *Cooks, Sales workers and Agricultural technicians* in the Toplicki district; *Civil engineering, Finance and insurance clerks, Street food salespersons, Toolmakers and Butchers* in the Jablanicki district.

3.2. Participation of employees and employers in skills upgrading

Most local enterprises – both those with positive and negative employment growth– provided training to their workers. Most of these where enterprise-based training programmes organized with the enterprises' own resources. As is to be expected, job creating enterprises dominated in the provision of training. At district level, the highest number of in-house training organized by enterprises was found in Pcinjski and Jablanicki. In other districts, local employers also used the training services of public educational institutions (this was especially the case of Zlatiborski). Overall, the highest number of training courses was provided by the job creating enterprises in Jablanicki (29 enterprises), followed by those in Pcinjski (28 enterprises) and Zlatiborski (20 enterprises).

Interestingly, only a handful of enterprises that envisage positive employment growth in next year report the delivery of training to their current employees, mostly in Zajecarski (8 companies), Nisavski (5 companies), Zlatiborski and Toplicki (4 enterprises each) and Raski (3 enterprises). Also these training programmes were mostly provided in-house with just two exceptions: one company in the Moravicki district engaged a private training institution while another in the Raski district used the services of a public training institution. Enterprises forecasting negative employment growth did not provide any training for their workers except for one company in the Raski district, through the services of a private training institution.

Enterprise-based training programmes were mostly of short duration (less than one month). The shorter programmes were found in Jablanicki and Pcinjski (one week only). Entrepreneurs are less likely to organize training for their workers, but when they do (this occurs especially in Jablanicki), they are organized in-house and for less than one week duration.

4. Trends in workforce recruitment

Enterprises and entrepreneurs in South and South-West Serbia use various methods to recruit workers, including advertising, the public employment services, enquires among relatives and friends and promoting current employees. Education and training institutions and private employment agencies are used to a lesser extent. The preferred method of recruitment among enterprises is the public employment services, followed by relatives' referral and advertising. Entrepreneurs mostly use referrals from relatives and acquaintances and advertising.

When hiring managers, professional and administrative staff, enterprises look for individuals with university attainment levels, while for other workforce needs they look for college and secondary education attainment. That is particularly the case for manufacturing enterprises and, to a lesser extent for businesses operating in the construction and accommodation industries.

Conversely, enterprises operating in wholesale and retail trade sector and – to a lesser extent – those in the professional, scientific and technical activities prefer to recruit managers, professional and administrative staff with secondary educational attainment. In all economic sectors, employers are almost equally divided between those not having any age preference, and those preferring prime-age workers (25-45 year of age).

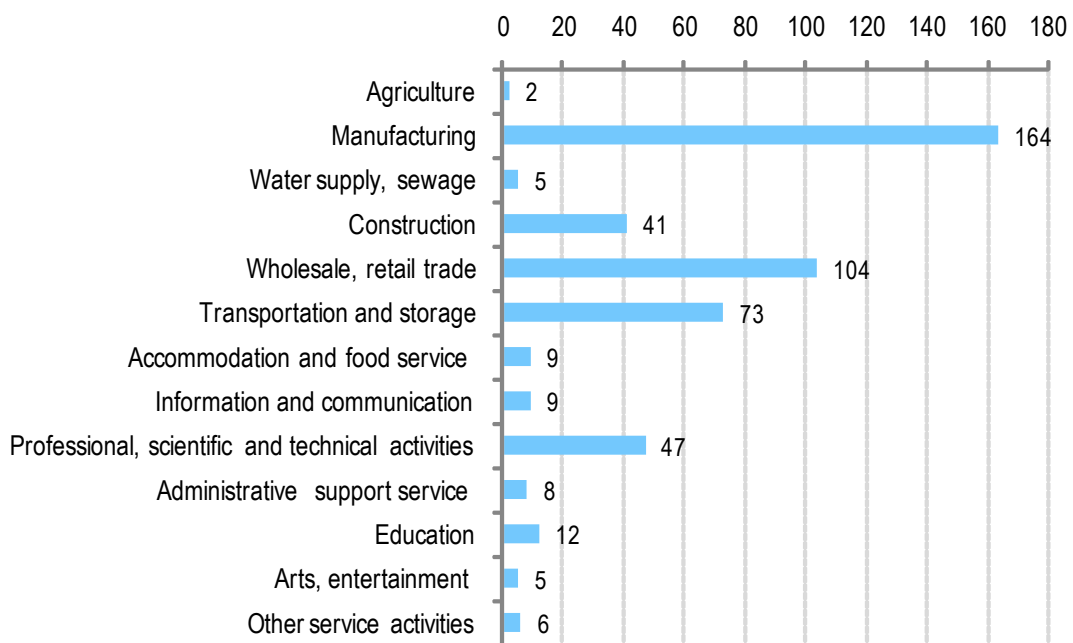
When hiring production, trade and elementary occupations workers, employers prefer to recruit individuals with secondary educational attainment. A small number of enterprises stated the preference for individuals with primary school only, mostly in *Manufacturing, Construction and Transportation and Storage*. In terms of age, prime age workers are the most in demand.

Entrepreneurs that created jobs in the prior year show a marked preference for hiring workers with secondary educational attainment (be they managers, professional and administrative staff, production, trade and elementary occupations workers). When hiring managers, college (in *Wholesale and retail trade*) and university (in *Accommodation and food service activities*) graduates are also welcomed, not so for production workers. The preference for recruiting prime age workers is more marked compared to enterprises. Interestingly, entrepreneurs that dismissed workers in the prior period have recruitment practices that resemble closely those of enterprises: college and university attainment for managers, professional and administrative staff; secondary and (to a lesser extent) primary educational attainment for production, trade and elementary occupations workers; preference for prime age workers, but also for recruits over 45 years of age.

4.1. Open vacancies

Almost all enterprises in South and South West Serbia had one or two open vacancies, for a total of 485 jobs available at the time of the survey. Approximately one quarter of surveyed enterprises had open vacancies for three to five posts, while about 6 per cent had open vacancies for more than 10 posts. As Figure 5 below shows, open vacancies were mostly recorded in *Manufacturing, Wholesale and retail trade; and Transportation and storage*, followed by *Construction* and *Professional, scientific and technical activities*. The other key economic sectors in the area (i.e. *Administrative and support services, Information and communications and Agriculture, forestry and fishing*) record a significantly lower number of open vacancies

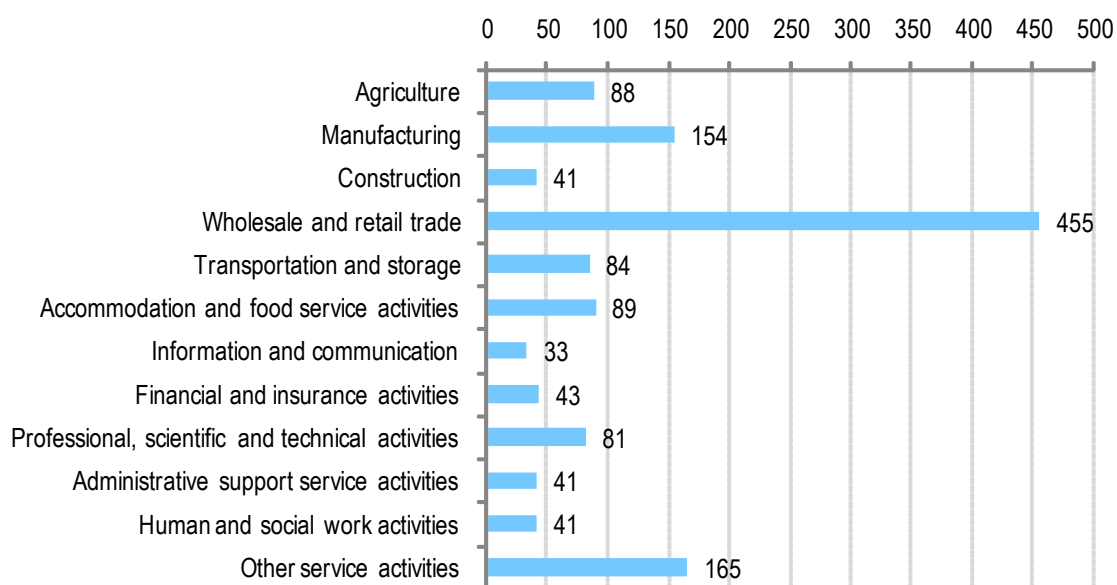
Figure 5: Open vacancies in enterprises, by economic sector



Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Entrepreneurs had more open vacancies compared to enterprises (1,315 in total), almost all for just one or two posts. Approximately 8 per cent of surveyed entrepreneurs had open vacancies for three to five posts. The majority of open vacancies among unincorporated businesses were found in *Wholesale and retail trade*, followed by *Other service activities, Manufacturing, Accommodation and food and Agriculture* (Figure 6).

Figure 6: Open vacancies in unincorporated businesses, by economic sector



Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Open vacancies by type of occupation see a high demand for *Heavy truck and lorry drivers, both among entrepreneurs (high frequency) and enterprises (moderate frequency)*. *Entrepreneurs also record vacancies for Shop sales assistants*. For enterprises, due to their low frequency, it is impossible to list the occupations most demanded. To mention just a few, enterprises have vacancies for legal professionals, plumbers, elementary workers and commercial sale representatives.

Generally, employers (both enterprises and entrepreneurs) have been reluctant to list the most important reasons for hard-to-fill vacancies. For a small number of enterprises, those would be unattractive working conditions (mostly enterprises in the *Transportation and storage* economic sector, and micro and large size enterprises to an equal extent) and poor qualifications of applicants (mostly in *Professional, scientific and technical activities* and amongst micro-enterprises).

The same applies to the planned strategies to overcome skill gaps. Just a few enterprises listed using technology as a substitute for labour (mainly manufacturing enterprises), while most would use the employment and training schemes promoted by the government as well as increase training for the existing work force. The use of employment and training schemes prevails among companies that created job in the prior year and particularly in *Professional, scientific and technical activities* sector. Wage increases were mentioned only in few manufacturing enterprises.

4.2. Occupational outlook (next three to five years)

The occupational outlook in next three to five years does not seem to bring substantial changes in the local labour markets. The occupations most demanded by enterprises and entrepreneurs in all economic sectors will be those that are currently required, namely shop sales assistants, commercial sales representatives, sewing and related workers, waiters and heavy truck and lorry drivers. The occupations expected to be most in demand are predominantly those requiring secondary educational attainment. This might pose a problem in local labour markets that are characterised by a prevalence of low-qualified individuals. Therefore, qualified individuals (i.e. those with at least secondary educational attainment) will experience better employment prospect in the medium term. In addition, the data of the survey point to an increasing relevance on the local labour market of occupations requiring higher educational attainment. In particular, enterprises signal the following occupations as likely to become important in the forthcoming period: civil engineers, chemical engineers and building architects.

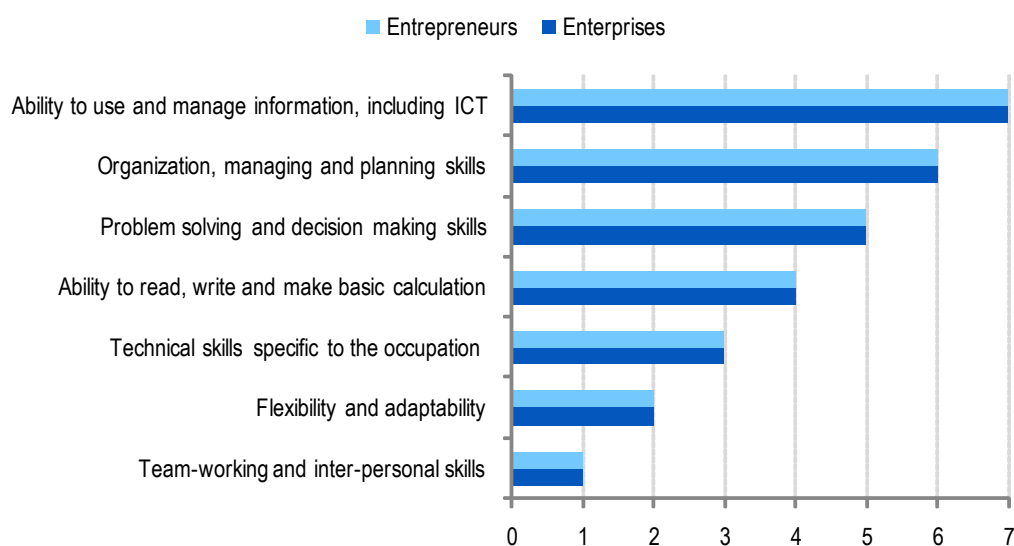
The number of jobs expected to be generated in the above-mentioned occupations in the next three to five years, however, is relatively small, given the current workforce base of respondent enterprises and entrepreneurs (see Table A3 and A4 in the Statistical Annex). Based on this, the most required occupations in near future will be food and related products machine operators, heavy truck and lorry drivers, shop sales assistants and commercial sales representatives, sewing and related workers, as well as cement, stone and other mineral products machine operators.

In terms of number of workers by occupation that the largest economic sectors in South and South West Serbia will require in the next 3-5 years, the figure point to sewing and related workers, plumbers, civil engineers, welders, cabinet-makers, chemical engineers, cement, stone and other mineral products machine operators, metal working machine tool operators and commercial and sales representatives as most required in manufacturing enterprises. For the wholesale and retail trade sector the most demanded occupations are likely to be shop sales assistants and shop supervisors. In the construction sector the occupations most in demand will be plumbers, bricklayers and woodworking machine tool operators. In the transport sector, the occupations that will offer most jobs are heavy truck, lorry, bus and tram drivers. Enterprises in the professional, scientific and technical services sector expect an increase of importance of occupations such as building architects, civil engineers and veterinarians.

On the side of entrepreneurs, the occupational outlook for the next 3-5 years is quite similar to the current situation. The only exception being the higher demand for bartenders and sheet metal workers that will appear in the accommodation industry and the construction sector, respectively. In terms of number of workers, unincorporated businesses will be requiring a higher number of new workers compared to enterprises and especially bricklayers, construction managers, civil engineering, carpenters, and heavy truck and lorry drivers (see Table A4 in the Statistical Annex). The economic sectors that will most demand workers in the above mentioned occupations are construction and manufacturing.

In terms of skills expected to become most important in the next 3 to 5 years, both enterprises and entrepreneurs find the ability to use and manage information, including information communication technology (ICT) as crucial (see Figure 7).

Figure 7: Ranking of skills needed in next to 3-5 years, enterprises and entrepreneurs



Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

The above figure shows that both enterprises and entrepreneurs value the range of core employability skills in a similar manner. Aside the use and management of information, those skills most sought after relate to organization, management and planning, problem solving and decision making. Technical skills specific to the occupations comes only fifth in the ranking of most important skills.

5. Skills of the workforce

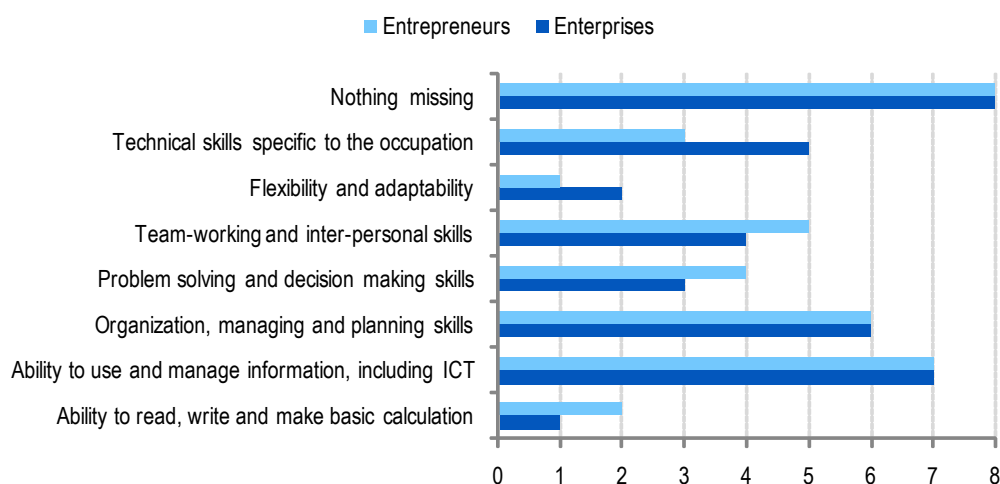
Enterprises and entrepreneurs mostly consider their workers proficient enough at their current jobs. This is mostly true for managers who are considered to a large extent fully competent for the job they do by both enterprises and entrepreneurs. In general, enterprises consider their workforce more proficient at their jobs compared to entrepreneurs.

The highest number of low proficient workers is found in professional, scientific and technical services, followed by manufacturing and construction. Since the professional and construction sectors are considerably smaller in terms of number of workers than manufacturing, it may be concluded that these two sectors face the highest skills gaps in relative terms. The lowest proficiency levels are found in (i) agricultural

and forestry production managers (professional, scientific and technical services); (ii) wood processing plant operators (manufacturing); (iii) economists (professional, scientific and technical services and manufacturing); and (iv) shop sales assistants (manufacturing, wholesale and retail trade; transportation and storage).

Receptionists (information and communications sector), food service counter attendants, tailors, sewing and related workers, accounting associate professionals (manufacturing), electronics, mechanics and services and carpenters (construction) are also assessed as poorly proficient. The skills that the existing workforce mostly lacks are the ability to use and manage information and organization, managing and planning skills (see Figure 8).

Figure 8. Lack of skills current workforce, enterprises and entrepreneurs



Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Entrepreneurs mostly lament a lack of technical skills specific to the occupation, while enterprises find that workers could improve their team-working and problem solving skills.

The ability to use and manage information is particularly poor among economists, sewing and related workers and office clerks; workers employed as electronics mechanics and servicers, contract labourers and agricultural and forestry production managers suffer from a lack of organization, managing and planning skills; while team-working skills are mainly lacking in workers employed as economists, electronics mechanics and servicers and shop sales assistants. Problem solving and decision-making skills are particularly poor among electronics mechanics and servicers and agricultural and forestry production managers.

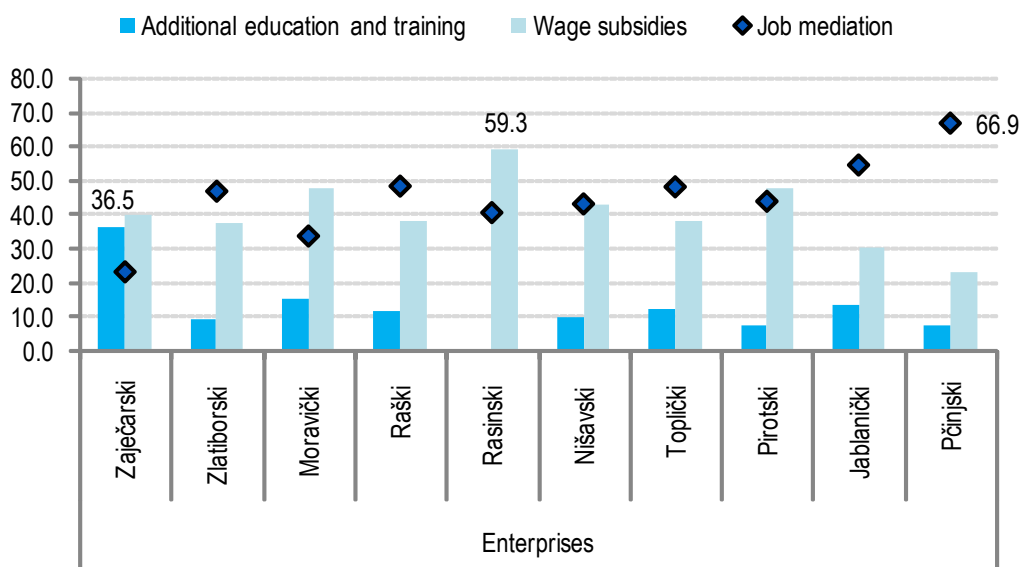
The majority of enterprises and entrepreneurs did not take any particular action to overcome the lack of proficiency of the workforce. Among enterprises that did, the preferred strategy has been the provision of further training and especially among manufacturing and to a lesser extent wholesale and retail trade enterprises. Entrepreneurs, conversely, did not use training, but preferred reallocating the work within the company.

6. Cooperation with the National Employment Service

Cooperation with the National Employment Service (NES) of Serbia is widespread among both enterprises and entrepreneurs in South and South-West Serbia. Micro enterprises and entrepreneurs operating in the manufacturing, construction, wholesale and retail trade, accommodation and food service sectors report the most frequent contact with the employment services.

The most frequently cited areas of cooperation with the NES for enterprises is job mediation and wage subsidies (Figure 9), except for enterprises in the Zajecarski district where additional education and training were as important as wage subsidies.

Figure 9: Most important areas of cooperation between enterprises and NES by districts (%)

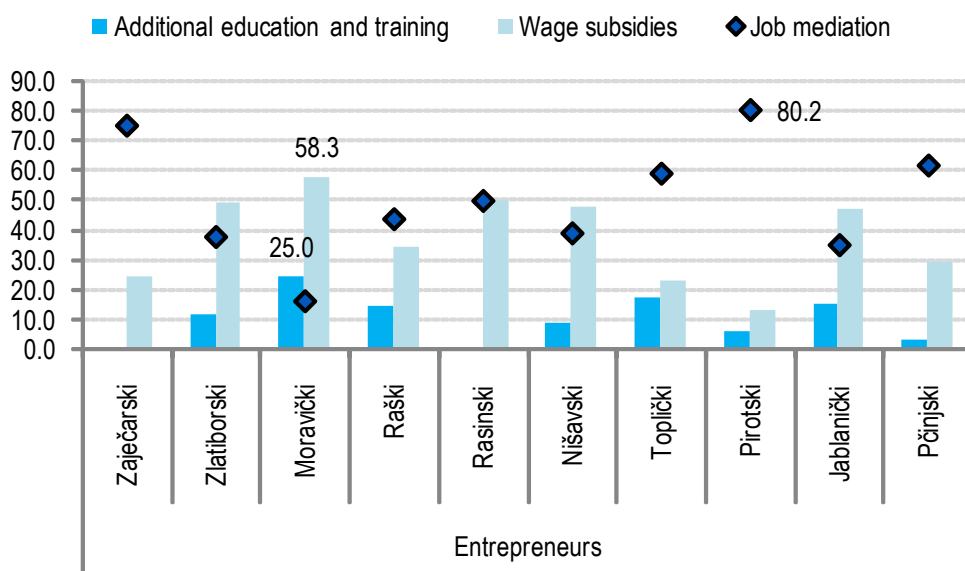


Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Disaggregated by districts, the figures show a predominance of wage subsidies in Zajecarski, Moravicki, Rasinski and Pirotski, while job mediation in Zlatiborski, Rascki, Toplicki, Jablanicki and Pcinjski.

Among entrepreneurs, the most important areas of cooperation with NES are similar to those of enterprises. Whereas job mediation and wage subsidies are the most important, their relative importance by district changes significantly (Figure 10). In Moravicki, for instance, programmes of additional education and training are more frequently the subject of cooperation compared to job mediation, but wage subsidies have been the areas of cooperation for almost two thirds of all surveyed entrepreneurs. Job mediation is the most frequent area of cooperation in Pirotski, Zajecarski, Toplicki and Pcinjski.

Figure 10: Most important areas of cooperation between entrepreneurs and NES by districts (%)



Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

In all districts local employers are highly interested to partner with the NES also in future, especially enterprises operating in wholesale and retail; manufacturing; construction, professional, scientific and technical services and entrepreneurs in the accommodation and food industry. The most important areas of cooperation with the NES remain wage subsidies, followed by job mediation. Only in Moravicki, additional education and training remains the preferred area of cooperation.

7. Conclusions and policy implications

7.1. Concluding remarks

The labour market in South and South West Serbia is characterized by high unemployment and low levels of educational attainment of the labour force. In terms of education opportunities within the region, there are a number of secondary and tertiary education institutions providing the qualifications for various occupational profiles and career areas. However, the key challenges in Serbia revolve around: 1) the lack of flexibility of the education and training system, which makes it inadequate to address fast-changing labour market requirements; 2) inadequately equipped schools that do not allow teaching staff to help students develop the practical skills needed to carry out job tasks; and 3) the lack of interest of students and their family in the occupations most demanded in the local labour markets.

The local economy is predominantly based on the manufacturing and the trading sectors and to a lesser extent on construction, transport, professional services and accommodation and food industries. The local labour market has been characterised by a moderate dynamics in terms of job creation and job destruction in the year preceding the survey. Most of the key economic sectors in the region in terms of number of workers (i.e. manufacturing, wholesale and retail trade, construction) experienced an overall net employment growth, more pronounced in certain districts (Moravicki, Zajecarski, Nisavski, Raski, Jablanicki, Toplicki and Pirotski) and among micro, medium and large-size enterprises. The occupational profiles that experience a positive net employment growth in the prior period – albeit small – were shop sales assistants, waiters, bricklayers, wood workers and accounting professionals, while those that experienced negative growth were mainly motor vehicles mechanics, freight handlers, cleaners, bakers and carpenters.

The prospects for job creation in the short-term are relatively good in the manufacturing and construction sectors and in occupations such as shop sales assistants, drivers, motor vehicle mechanics, bricklayers, carpenters and food production machine operators. These results, however, since they are based on the subjective forecast of employers, may over-estimate the actual performance of single occupational profiles. The occupational outlook for the next three to five year is not expected to change drastically, with the already dominant economic sectors maintaining largely their role in providing new jobs (e.g. manufacturing, trading, construction and accommodation and food industry), and occupation such as shop sales assistants, commercial sales representatives, tailors, waiters and drivers still in demand in the medium term.

As far as workers' recruitment is concerned, the findings of the survey clearly point to secondary educational attainment as the minimum requirement for most occupations (including elementary occupation workers). This confirms the results of prior surveys, whereby educational attainment is used by employers as a proxy of skills. Despite this practice, employers still find that some of their workers lack core employability skills such as using and managing information, organization, management and planning skills and problem-solving skills. Interestingly, these skills rank higher than

technical skills for the performance of an occupation. Most employers sustain not to have age preferences: however, those that do prefer hiring adult workers, as these are more likely to have prior work experience and core employability skills. The lack of proficiency of the workforce is not addressed at all or addressed through training. The figures on enterprise-based training, however, show that the investment of enterprises and entrepreneurs in workforce development is very low: most employers do not provide training to their workers and those that do mostly organize very short courses, unlikely to make a difference in improving labour productivity.

7.2. Policy implications

The data of the *Occupational Skills Needs Survey* conducted in South and South-West Serbia point to a number of policy areas that need to be addressed in the short to medium term to support job creation and local economic development.

- ✓ *Improve the link between education and the world of work.* Labour market data point to higher rewards in terms of employment outcomes for individuals with secondary educational attainment and above. However, the share of students enrolling in vocational education has been declining over the years, reflecting the increasing preference of students and their families for programmes that can more easily lead to university enrolment. In order to ensure that young graduates of secondary schools have the skills to perform on the job and are able to respond to changing requirements, the curricula of education institutions need to envisage more enterprise-based learning opportunities. This will provide young graduates with the work experience prized by employers in the recruitment process. In addition, more efforts should be deployed to provide reliable and updated labour market information through career education services in primary and secondary schools to allow young students to make informed choices. Often, the lack of interest of young people in certain occupations is caused by a poor understanding of the tasks involved as well as the labour market rewards (in terms of better employment and earning opportunities) they may yield. Finally, the introduction of a national qualification system could prove instrumental to tailor educational programmes to the requirements of the local labour market.
- ✓ *Expand public investment in human capital development to improve employment growth, wage levels and labour productivity.* The findings of the survey emphasize two issues that are of the essence in determining the future economic and labour market prospects of South and South-West Serbia, namely the prevalence of low skilled individuals in the local population and the limited investment of enterprises in the development of the workforce. Aside ensuring that young people, and especially those most at risk of social exclusion, do not leave school early, it is necessary to expand the provision of remedial education and training services targeting adults (15 years old and over) with primary and less than primary education. As educational attainment is used as a proxy by em-

ployers, such adult education and training courses should lead to a recognized education certificate spendable during the job search process. The acquisition of higher skills levels improves employment opportunities and earnings levels, thus allowing individuals to escape poverty traps. The lower wage levels detected in South and South-West Serbia compared to the national average are in part due to lower labour productivity. The links between training and labour productivity are well known: the higher the investment in training, the higher the labour productivity per hour worked. However, many enterprises face difficulties in organizing and financing training programmes for all the workers that would need them. This is where government's support can make a difference. The experience of enterprises that applied to the training programmes available through the NES is largely positive and should be expanded. This, however, requires that the funding available for the implementation of active labour market policies be substantially increased and that the local employment offices be granted a certain degree of autonomy in their design and implementation to better target local requirements.

- ✓ *Employment subsidies may attract employers towards the services provided by the NES, but they should be well targeted to avoid deadweight and displacement effects.* Employment subsidies are the most frequently mentioned area of cooperation between the NES and enterprises in South and South-West Serbia. Wage subsidies and other financial incentives (e.g. tax or social security exemptions for a limited period of time) for employers who recruit young people can help improve school-to-work transitions. Indeed, these financial incentives can offset the cost of the initial training that young workers require or compensate for their limited work experience and initial lower productivity. Wage subsidies can be particularly effective in improving the employment rates of individuals facing labour market disadvantages (e.g. low-skilled, long-term unemployed, national minority groups) provided they are specifically targeted. If not targeted, these subsidies often result in labour market distortions in terms of deadweight losses (e.g. resources are invested for individuals who would have been recruited also without the subsidy) and substitution effects (the products of an enterprise with subsidized workers displace those of enterprises that are not subsidized).

Annex 1

Methodological note

The first step of the *Occupational Skills Survey* work was the review of the methodological framework for the running of a one-to-one survey with enterprises (corporate businesses) and entrepreneurs. The sampling frame was upgraded by cross-referencing the records of the National Business Register with the data of the Tax Administration of Serbia to exclude inactive enterprises.

The sampling methodology was stratified by (i) municipality/district (Novi Pazar, Tutin, Raška, Sjenica, Ivanjica, Priboj, Prijepolje, Nova Varoš, Prokuplje, Blace, Žitorađa, Kuršumljica, Leskovac, Lebane, Bojnik, Medveđa, Surdulica, Vlasotince, Bosilegrad, Vranje, Trgovište, Preševo, Bujanovac, Vladičin Han, Crna Trava, Brus, Aleksinac, Merošina, Gadžin Han, Doljevac, Babušnica, Bela Palanka, Knjaževac, and Svrljig), (ii) enterprise size class (micro: less than 10 employees, small between 10 and 49 employees, medium between 50 and 249 employees, and large 250 employees and over); and (iii) economic sector (NACE rev2). The sample design envisaged that 1,500 respondents be interviewed. The final sample included 1,503 respondents (465 entrepreneurs and 1,038 corporate businesses). The response rate was about 48 per cent for enterprises and 39 per cent for unincorporated businesses. The estimates were obtained in a standard way for stratified simple random sampling. The totals were estimate by summing weighted values of the sample, where the weight for the units of the same stratum were determined as a quotient of the number of units in the stratum and the number of units in the sample. The initial weights were adjusted for non-response.

The survey questionnaire was revised to respond to the key research question and tested at the beginning of November 2013 to verify wording, sequence of questions, skip patterns and consistency of response. The data collection phase was preceded by the selection of experienced enumerators and their training on the survey instrument. To this end, a detailed codebook was prepared to ease data collection. Such material included: i) coding system; ii) protocol for data entry and checking; and iii) substitution procedures.

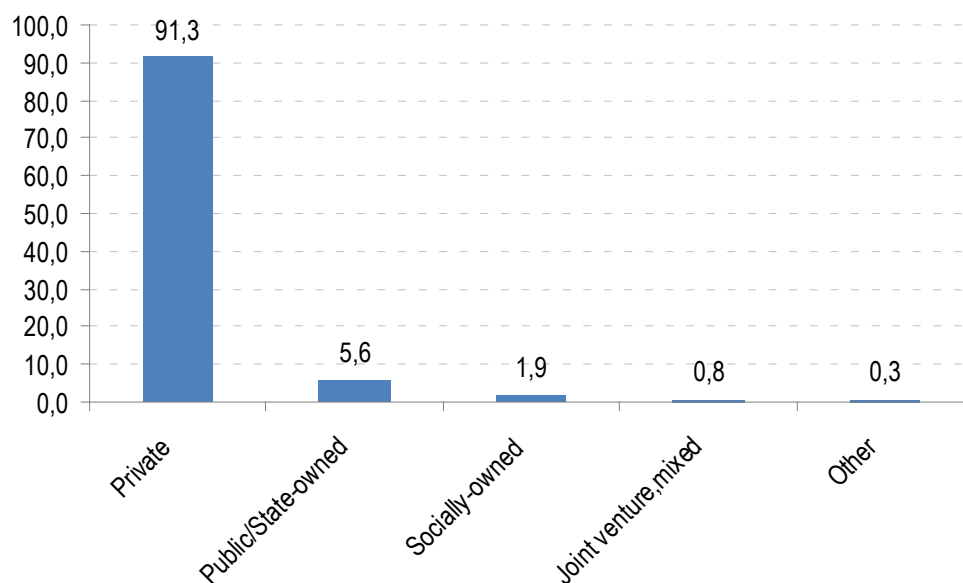
The survey instrument was administered through telephone interview technology from the call-centre of the Statistical Office of Republic of Serbia. The syntax for data entry was prepared in BLAISE language (computer assisted technology whereby the survey questions are described in a data model that specifies question order and conditional routes and checks). One-to-one interviews commenced on the 14th of November and were concluded on 20th of December 2013.

Data were organized in two datasets, one for enterprises and one for unincorporated businesses (entrepreneurs) and statistical tables generated according to an established tabulation plan.

Annex 2

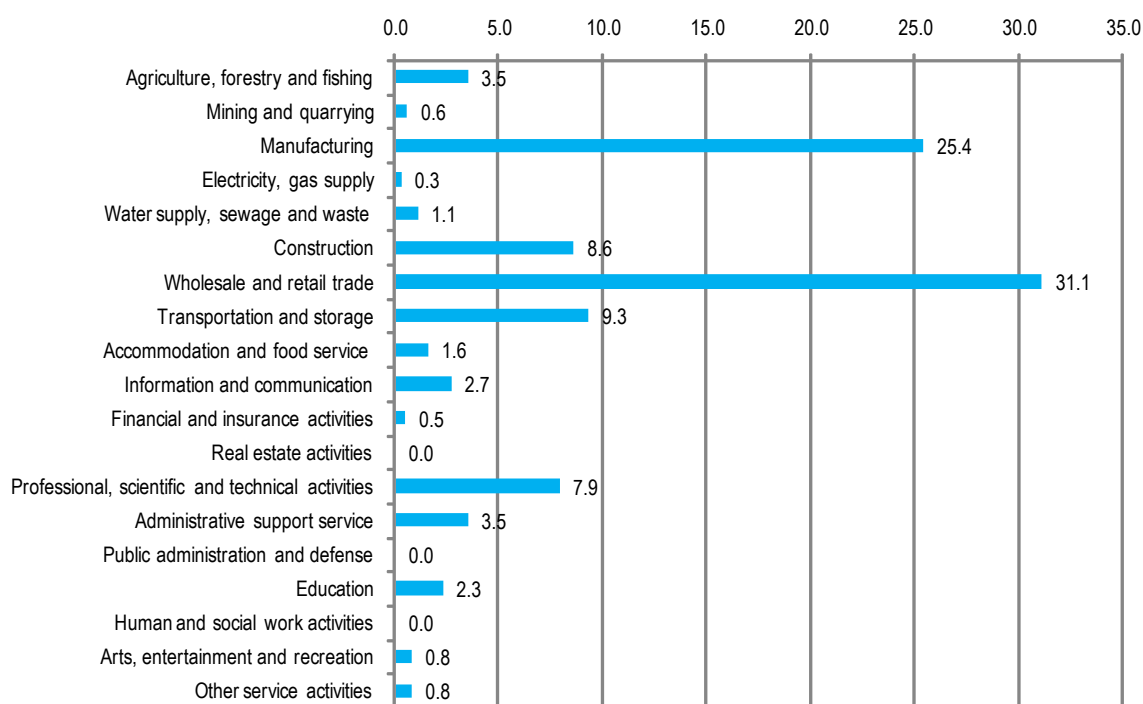
Statistical Annex

Figure A1: Enterprises by type of ownership



Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Figure A2: Enterprises by economic sectors



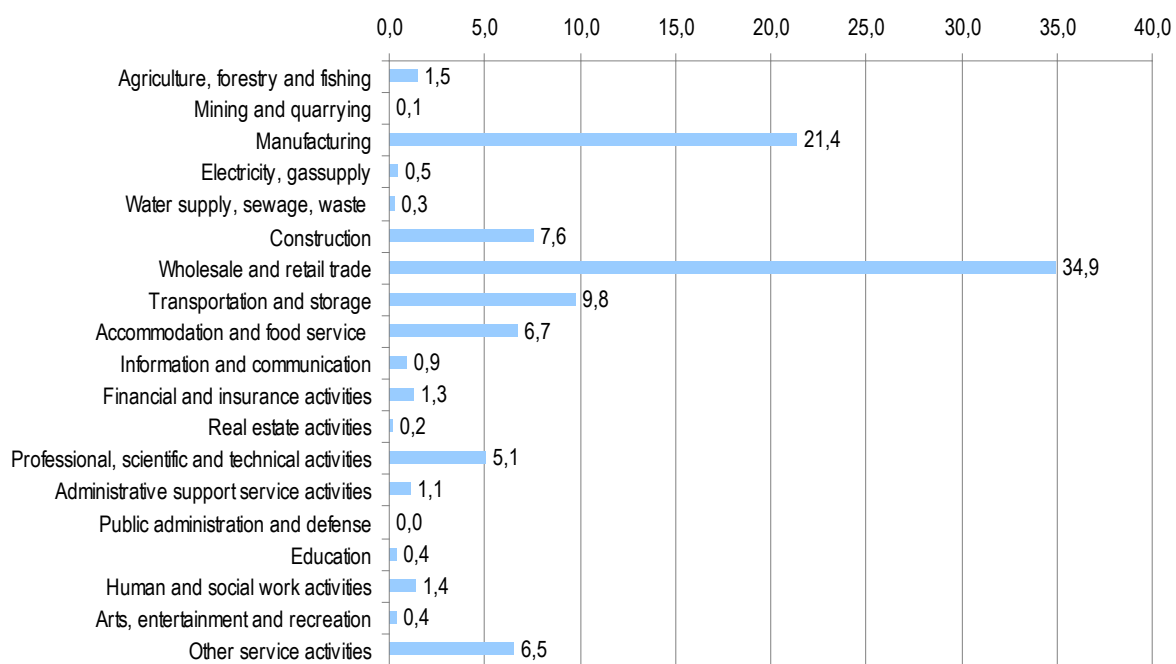
Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Table A1 Enterprises by economic sector and district (%)

	DISTRICT										TOTAL
	Zaječarski district	Zlatiborski district	Moravički district	Raški district	Rasinski district	Nišavski district	Toplički district	Pirotski district	Jablanički district	Pčinjski district	
Agriculture, forestry and fishing	10.4	4.2	8.7	2.1	7.9	6.7	6.9	0.0	1.4	1.4	3.5
Mining and quarrying	0.0	0.6	0.0	1.0	7.9	0.0	0.0	0.0	1.3	0.1	0.6
Manufacturing	24.4	26.4	26.7	20.6	39.2	35.1	34.0	39.6	20.0	25.4	25.4
Electricity, gas, steam and air conditioning supply	0.0	0.5	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.5	0.3
Water supply, sewerage, waste management and remediation activity	0.9	0.9	0.4	0.3	2.3	2.7	1.2	3.4	2.1	0.8	1.1
Construction	14.8	9.0	9.7	9.3	0.0	3.6	5.1	6.5	11.6	7.8	8.6
Wholesale and retail trade; repair of motor vehicles and motor	27.8	22.7	29.3	36.3	7.9	35.8	18.8	15.2	25.8	38.6	31.1
Transportation and storage	4.3	14.2	12.7	13.2	0.0	4.1	6.3	3.6	10.4	6.8	9.3
Accommodation and food service activities	5.2	1.6	3.6	1.7	7.9	0.4	0.0	1.9	0.7	1.5	1.6
Information and communication	0.0	2.5	2.8	1.1	11.1	2.5	4.1	1.9	3.5	3.3	2.7
Financial and insurance activities	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.9	0.5
Real estate activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Professional, scientific and technical activities	7.8	11.5	4.3	6.4	15.8	6.8	4.6	20.7	9.4	8.0	7.9
Administrative and support service activities	4.3	3.5	0.4	2.7	0.0	0.3	9.4	7.3	6.5	1.7	3.5
Education	0.0	1.8	1.4	2.2	0.0	2.0	3.6	0.0	5.4	1.1	2.3
Human health and social work activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Arts, entertainment and recreation	0.0	0.8	0.0	0.7	0.0	0.0	6.0	0.0	0.7	0.0	0.8
Other service activities	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	1.2	1.8	0.8

Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Figure A3: Entrepreneurs by economic sectors



Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Table A2: Entrepreneurs by economic sectors and districts

	DISTRICT										TOTAL
	Zaječarski district	Zlatiborski district	Moravički district	Raški district	Rasinski district	Nišavski district	Toplički district	Pirotski district	Jablanički district	Pčinjski district	
Agriculture and fishing	10.4	4.2	8.7	2.1	7.9	6.7	6.9	0.0	1.4	1.4	3.5
Mining and quarrying	0.0	0.6	0.0	1.0	7.9	0.0	0.0	0.0	1.3	0.1	0.6
Manufacturing	24.4	26.4	26.7	20.6	39.2	35.1	34.0	39.6	20.0	25.4	25.4
Water supply, sewage, waste management	0.0	0.5	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.5	0.3
Construction	0.9	0.9	0.4	0.3	2.3	2.7	1.2	3.4	2.1	0.8	1.1
Wholesale and retail trade	33.4	26.1	34.7	50.0	33.3	38.2	20.9	24.1	33.8	33.2	34.9
Transportation and storage	8.3	17.2	7.7	10.8	0.0	15.4	11.7	14.1	8.0	5.7	9.8
Accommodation and food service activities	0.0	11.3	11.5	6.3	16.7	2.2	6.9	4.7	5.2	8.6	6.7
Information and communication	0.0	2.0	3.8	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.9
Financial and insurance activities	0.0	0.0	3.8	2.1	0.0	0.0	0.0	0.0	2.3	1.0	1.3
Real estate activities	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Professional, scientific and technical activities	8.3	3.7	3.8	2.1	11.1	7.0	10.8	4.7	3.9	5.2	5.1
Administrative and support services	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	2.7	1.1
Education	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	0.4
Human health and social work	0.0	2.0	7.7	2.1	0.0	0.0	0.0	0.0	0.0	2.6	1.4
Arts and entertainment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.4
Other service activities	0.0	3.7	11.5	3.3	0.0	3.9	21.0	28.8	5.5	4.4	6.5

Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Table A3: Enterprises class size, by districts (%)

	DISTRICT										TOTAL
	Zaječarski district	Zlatiborski district	Moravički district	Raški district	Rasinski district	Nišavski district	Toplički district	Pirotski district	Jablanički district	Pčinjski district	
1 to 9 employees	65.0	64.1	75.0	76.5	66.4	71.6	75.0	57.0	72.0	80.8	74.2
10 to 49 employees	24.4	28.8	20.2	18.5	23.6	22.9	18.0	33.1	21.4	14.2	19.8
50 to 249 employees	10.5	5.0	2.3	5.0	9.9	4.9	7.0	9.9	4.6	4.3	5.1
Over 250 employees	0.0	2.1	2.5	0.0	0.0	0.6	0.0	0.0	2.0	0.8	0.9

Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Table A4: Enterprises by time of operation and districts (%)

	DISTRICT										TOTAL
	Zaječarski district	Zlatiborski district	Moravički district	Raški district	Rasinski district	Nišavski district	Toplički district	Pirotski district	Jablanički district	Pčinjski district	
Less than 12 months	0.0	0.0	0.0	0.3	0.0	0.6	0.0	0.0	0.2	0.0	0.1
From 1 to 2 years	6.1	7.8	3.6	11.3	7.9	3.0	8.1	3.7	6.1	4.9	6.8
From 2 to 5 years	10.5	19.6	11.9	23.0	15.8	13.5	11.6	6.5	5.8	16.2	14.9
More than 5 years	83.4	72.6	84.5	65.5	76.3	82.9	80.3	89.8	87.9	78.9	78.1

Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Table A5 - Enterprises with positive employment growth by economic sector and district (last year, %)

										TOTAL
	Zlatiborski district	Moravički district	Raški district	Rasinski district	Nišavski district	Toplički district	Pirotski district	Jablanički district	Pčinjski district	
Agriculture and fishing	0	0	0	0	0	11	0	0	0	1.3
Mining and quarrying	0	0	0	0	0	0	0	2	1	0.6
Manufacturing	36.8	69.0	16.8	100.0	66.0	41.9	37.6	32.5	54.0	45.9
Water supply, sewage, waste management	0	7.7	2.5	0	14.2	0	0	10.2	2.5	4.0
Construction	4.9	7.7	15.4	0	0	13.8	62.4	5.5	13.1	10.7
Wholesale and retail trade	3.8	0	21.5	0	0	4	0	34.6	5.7	11.5
Transportation and storage	5.4	0	8.6	0	0	8	0	5.5	23.4	9.4
Accommodation and food service activities	6.6	15.5	14.9	0	0	0	0	0	0	3.7
Information and communication	0	0	5	0	0	0	0	0	0	0.8
Professional, scientific and technical activities	42.5	0	2.5	0	19.8	0	0	9.9	0	7.5
Education	0	0	12.3	0	0	0	0	0	0	1.9
Arts, entertainment	0	0	0	0	0	21.7	0	0	0	2.6

Source: Republic Statistical Office of Serbia, Occupational Skills Needs Survey, Belgrade, 2013

Table A6 - Enterprises with negative employment growth by economic sector
(last year, %)

									TOTAL
	Zlatiborski district	Moravički district	Raški district	Nišavski district	Toplički district	Pirotski district	Jablanički district	Pčinjski district	
Mining and quarrying	18	0	2	0	0	0	0	0	1.7
Manufacturing	69.1	57.2	49.6	72.6	0.0	100.0	34.1	12.4	44.9
Water supply, sewage, waste management	0	0.0	0.0	5.8	0	0	0.0	5.4	1.7
Construction	0.0	0.0	0.0	0	0.0	0.0	40.9	7.0	10.7
Wholesale and retail trade	13.4	28	11.4	8	50	0	18.5	28.7	17.3
Transportation	0.0	8	22.8	0	50	0	6.5	10.4	10.7
Information and communication	0	0	0	9	0	0	0	0	0.8
Professional, scientific and technical activities	0.0	0	13.8	0.0	0	0	0.0	33	10.4
Administrative support service activities	0	8	0	5	0	0	0	0	1.1
Human health and social work activities	0	0	0	0	0	0	0	3	0.6
Total	100	100	100	100	100	100	100	100	100

Source: Republic Statistical Office of Serbia. Occupational Skills Needs Survey. Belgrade. 2013

Table A7 - Enterprises with positive employment growth by economic sector
(next year, %)

	DISTRICT										TOTAL
	Zaječarski district	Zlatiborski district	Moravički district	Raški district	Rasinski district	Nišavski district	Toplički district	Pirotski district	Jablanički district	Pčinjski district	
Mining and quarrying	0	0	0	0	0	0	0	0	0	0	0
Manufacturing	0	32.8	100	12.6	28.5	75.5	0	0	0	82.8	44.7
Water supply, sewage, waste management	0	0	0	12.6	0	0	0	0	0	0	1.7
Construction	0	0	0	74.8	0	0	0	0	100	0	14.0
Wholesale and retail trade	0	0	0	0	0	0	0	0	0	8.6	20.6
Accommodation and food service activities	0	32.8	0	0	0	24.5	0	0	0	0	4.8
Professional, scientific and technical activities	0	34.3	0	0	71.5	0	100	100	0	8.6	20.6
Administrative and support service activities	100	0	0	0	0	0	0	0	0	0	11.1
Total	100	100	100	100	100	100	100	100	100	100	100

Source: Republic Statistical Office of Serbia. Occupational Skills Needs Survey. Belgrade. 2013

Table A8: Top 10 occupations shedding and creating jobs in the past year
(enterprises and entrepreneurs)

No	ENTERPRISES. PAST YEAR				ENTERPRISES. PAST YEAR			
	Shedding jobs		Creating jobs		Shedding jobs		Creating jobs	
	Occupation	Top 10	Occupation	Top 10	Occupation	Top 10	Occupation	Top 10
1	Shop sales assistants	252	Shop sales assistants	283	Shop sales assistants	959	Shop sales assistants	963
2	Heavy truck and lorry drivers	161	Heavy truck and lorry drivers	139	Waiters	262	Waiters	314
3	Driving instructors	94	Contract labourer	82	Motor vehicle mechanics and repairers	177	Bricklayers and related workers	254
4	Accounting associate professionals	81	Commercial sales representatives	78	Bricklayers and related workers	166	Accounting associate professionals	233
5	Commercial sales representatives	62	Car, taxi and van drivers	69	Freight handlers	141	Stock clerks	157
6	Sewing, embroidery and related workers	58	Cleaners and helpers in offices, hotels and other establishments	65	Cleaners and helpers in offices, hotels and other establishments	116	Heavy truck and lorry drivers	136
7	Stock clerks	54	Accounting associate professionals	63	Bakers, pastry-cooks and confectionery makers	112	Sales workers not elsewhere classified	129
8	Motor vehicle mechanics and repairers	50	Motor vehicle mechanics and repairers	55	Cabinet-makers and related workers	89	Sewing, embroidery and related workers	119
9	Toolmakers and related workers	49	Sewing, embroidery and related workers	49	Civil engineering technicians	88	Wood treaters	111
10	Bus and tram drivers	46	Waiters	48	Data entry clerks; Carpenters and joiners; Photographic products machine operators	88 (each)	Tailors, dressmakers, furriers and hatters	105

Source: Republic Statistical Office of Serbia. Occupational Skills Needs Survey, Belgrade, 2013

Table A9. Top 10 occupations shedding and creating jobs in the next year
(enterprises and entrepreneurs)

No	ENTERPRISES. PAST YEAR				ENTERPRISES. PAST YEAR			
	Shedding jobs		Creating jobs		Shedding jobs		Creating jobs	
	Occupation	Top 10	Occupation	Top 10	Occupation	Top 10	Occupation	Top 10
1	Chemical processing plant controllers	37	Shop sales assistants	138	Shopkeepers	108	Shop sales assistants	921
2	Shop sales assistants	26	Heavy truck and lorry drivers	96	Shop sales assistants	97	Heavy truck and lorry drivers	414
3	Cleaners and helpers in offices, hotels and other establishments	21	Motor vehicle mechanics and repairers	54	Toolmakers and related workers	67	Bricklayers and related workers	227
4	Chemical engineers	21	Sewing, embroidery and related workers	48	Accounting and bookkeeping clerk	65	Carpenters and joiners	227
5	Bakers, pastry-cooks and confectionery makers	13	Economists	45	Contract labourer	53	Commercial sales representatives	149
6	Personnel clerks	11	Car, taxi and van drivers	40	Agricultural technicians	46	Building and related electricians	127
7	Concrete placers, concrete finishers and related workers	10	Food and related products machine operators	34	Motor vehicle mechanics and repairers	43	Woodworking machine tool setters and operators	112
8	Toolmakers and related workers	9	Driving instructors	34	Metal working machine tool setters and operators	24	Cabinet-makers and related workers	107
9	Commercial sales representatives	8	Toolmakers and related workers	32			Cooks	107
10	Sewing, embroidery and related workers; Carpenters and joiners; Contract labourer; Car, taxi and van drivers	8 (each)	Chemical engineers	32			Plastic products machine operators	107

Source: Republic Statistical Office of Serbia. Occupational Skills Needs Survey, Belgrade, 2013

Table A10: Occupational outlook. next 3-5 years. job destroying / creating enterprises in last/next year

No	ENTERPRISES JOB DESTROYING LAST 12 MONTHS		ENTERPRISES JOB CREATING LAST 12 MONTHS		ENTERPRISES JOB CREATING NEXT 12 MONTHS	
	Occupation	Number of workers	Occupation	Number of workers	Occupation	Top 10
1	Commercial sales representatives	21	Food and related products machine operators	27	Cement, stone and other mineral products machine operators	20
2	Sewing, embroidery and related workers	21	Heavy truck and lorry drivers	24	Commercial sales representatives	11
3	Plumbers and pipe fitters	18	Economists	17	Bricklayers and related workers	6
4	Civil engineers	11	Commercial sales representatives	17	Bakers, pastry-cooks and confectionery makers	6
5	Shop sales assistants	11	Sewing, embroidery and related workers	17	Veterinarians	5
6	Heavy truck and lorry drivers	11	Waiters	14	Cooks	4
7	Welders and flame cutters	10	Shopkeepers	14	Metal working machine tool setters and operators	4
8	Chemical engineers	9	Bakers, pastry-cooks and confectionery makers	14	Sweepers and related labourers	4
9	Building architects	9	Air traffic safety electronics technicians	13	Welders and flame cutters	3
10	Cabinet-makers and related workers; Bus and tram drivers	9 (each)	Shop sales assistants	13	Woodworking machine tool setters and operators	3

Source: Republic Statistical Office of Serbia. Occupational Skills Needs Survey. Belgrade. 2013

Table A11: Occupational outlook, next 3-5 years (job destroying/creating entrepreneurs in last year)

No	ENTREPRENEURS. JOB DESTROYING LAST 12 MONTHS		ENTREPRENEURS JOB CREATING LAST 12 MONTHS	
	ISCO	Number of workers	ISCO	Top ten
1	Construction managers	88	Heavy truck and lorry drivers	88
2	Civil engineering technicians	88	Bricklayers and related workers	78
3	Bricklayers and related workers	88	Commercial sales representatives	50
4	Carpenters and joiners	88	Waiters	41
5	Bakers, pastry-cooks and confectionery makers	66	Bartenders	41
6	Sheet metal workers	24		
7	Toolmakers and related workers	24		
8	Shop sales assistants	15		
9	Building architects	9	Welders and flame cutters	3
10	Cabinet-makers and related workers; Bus and tram drivers	9 (each)	Woodworking machine tool setters and operators	3

Source: Republic Statistical Office of Serbia. Occupational Skills Needs Survey. Belgrade. 2013

ILO Decent Work Team and Country Office for
Central and Easter Europe,

Mozsar u. 14
H-1066 Budapest
Hungary
www.ilo.org

