SKILLS DEVELOPMENT AND SUSTAINABLE EMPLOYMENT DURING TRANSITION IN SERBIA

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Abstract: *The objective of this paper is to assess the process of matching the skills available by the workforce and the skills demanded by the employers in the Serbian labour market. A skill mismatch problem is mainly caused by the structural unemployment. The main causes of skills mismatches are the unfavourable structure of the workforce and slow adjustment capacities of the education and training institutions, on the supply side. On the demand side, skills mismatches arise due to inability of the employers to develop more complex tasks and the low level of the companies' training intentions. Unfavourable structure of skills may affect both job candidates, policy makers, and the employers in a way that it prolongs the time spent in job searching, induces the increase in social expenditures, and reduces business productivity. In this paper employability skills are analysed in the context of sustainable employment and it is concluded that the Serbian labour market generates substantial skills gaps through all levels of education.*

Keywords*: employability, labour market, skills, structural unemployment.*

1. INTRODUCTION

Skills are defined as an individual's knowledge, competencies and abilities acquired during the formal education, non-formal and informal learning (Cappelli 2015; Kahn 2015). A critical concept of skills relates them directly to the job requirements. Skills vary over one's career and they are subject to different practices that indicate weak functioning of the labour market, such as skills shortages, skills gaps and skills mismatches. A skill mismatch arises when there is an imbalance 'between the qualifications and skills that individuals possess and those that are needed by the labour market' (Cedefop 2015, 27). In a similar way, skills gaps are related to the situation where 'skills' possessed by the job applicants and/or employees in companies 'are below the level required to perform a particular job', whereas skills shortages indicate the situation on the labour market when 'there are not enough job candidates of certain occupations and skills' (Cappelli 2015, 252; Cedefop 2015, 28).

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Skills development at the country level is under a strong influence of the structural change (Colombano, Krkoska 2009). The main drivers of skills development are the increasing demand of particular economic sectors, including, for instance, information and communication technologies and other services sectors, and a demographic change that influences the ageing of the workforce and an increase in the amount of obsolete skills. In a broader sense, employability depends on qualifications, knowledge, skills and attitudes (Hillage, Pollard 1998). The development of employability skills supports the concept of sustainable employment, where sustainability refers to a satisfactory level of skills utilization during the lifetime. The main objective of this paper is to examine the level of employability skills development, and in particular how the process of matching the skills available by the workforce and the skills demanded by the employers function in the Serbian labour market. The findings that relate to the supply and the demand side of skills utilization are derived by using the data of recently conducted the Labour Force Survey and the Employers Survey.

The relationship between skills and sustainable employment has become an important topic, especially in the developed economies struggling with a decline in the active population and the ageing of the workforce. Siničáková (2011) argues that labour mobility within the European Union (EU) member states increases the level of occupation-specific and transferable skills. On the other hand, it also induces skills shortages in the new member states because highly-skilled workers prefer higher wages and better working conditions that are usually offered in the old EU member states.

In the case of Serbia, however, the importance of skills for the labour market participants' employability is further associated with the high and volatile unemployment, a pronounced rate of the increase in the long-term unemployment, especially among the youth, and considerable skill mismatches. All those issues characterize the structural unemployment. For instance, in the aftermath of the economic crisis, the employers hesitate to open job vacancies what causes a time lag between the business opportunities and the real needs for workers who possess certain knowledge and skills (Ognjenović, Branković 2013a). In particular, this is a common feature of the economies that share similar paths of the transitional reforms, characterized by a weak business climate and where entrepreneurial intentions among the youth are not sufficiently developed and supported (Rajh et al. 2018). In general, the companies in Serbia have a low intention to train. However, the findings differ depending on the economic sector, region and the size of the company (Ognjenović 2015).

The Organization for Economic Co-operation and Development (OECD) member countries spend, on average, around 5.2 percent of the gross domestic product (GDP) on education, including both the public and the private sector expenditures (OECD 2016). They expect a lower level of unemployment among those with vocational upper secondary education in comparison with general secondary education, as well as among those who acquired their degrees in the higher education institutions. The Government of the Republic of Serbia in the *Strategy for the Development of Education* envisages increasing the public expenditures for education from current 4.5 to 6 percent of the GDP by 2020 (Official Gazette 2012). Also, in order to continuously improve skills of the workforce, it is envisaged that at least 7 percent of the adult population attends some lifelong learning programs. These objectives are harmonized with the employment policies included in the *National Employment Strategy for the Period 2011-2020* (Official Gazette 2011). Support to the development of skills of the workforce is covered by active labour market policy measures.

The structure of this paper is as follows. The next section describes the data and a method used in the analysis, defines concepts and provides some basic comparisons of the main indicators between Serbia and the selected countries. The second section presents the main results of the analysis and the discussion of the relevant findings, while the last section concludes the paper.

2. RESEARCH METHODS

2.1. Data and methods

Three main sources of data are used in the analysis of qualifications and skills needs in the Serbian labour market. Two data sources represent nationally representative consecutive surveys, whereas one source of information is collected for the purposes of compiling a report used to compare world economies.

In order to analyse the supply of skills and occupations in the Serbian labour market the Labour Force Survey (LFS) data are used. This is the representative source of data provided by the Statistical Office of the Republic of Serbia (SORS) at the individual level. On the other hand, an analysis of the demand for skills and occupations is carried out using the Employers Survey established by the National Employment Service (NES). A sample unit in this survey is a company selected to participate in the process of data collection.

Selection of the sample units for both surveys is based on the statistical theory of sampling. Recently conducted the 2016 LFS was realised on a total sample of 133.7 thousand individuals, including 116.4 thousand individuals older than 15 years. The Employers Survey for 2016 was conducted on a sample of 3775 companies. This survey is used since 2011 as an instrument for short-term anticipation of occupation and skill needs at the level of individual companies, economic sectors and regions. However, the main drawback of this survey is that skills needs are assessed only by the employers, whereas the information such as the usage of skills or the employers' training intentions is absent from the instrument currently in use. Therefore, the assessment of skills gaps and skills shortages based on this survey is not complete. Similar instruments are developed for the European companies (Cedefop 2015), or for the OECD countries, including the Survey of Adult Skills (Pellizzari, Anne 2017).

Both data sources for Serbia enable the comparisons through time, regions and economic sectors. However, only data aggregated at the national level were used in this analysis.

In addition, the data of the World Economic Forum (WEF) are used for the comparison of the best ranked world economies with the selected Central and Eastern European (CEE) countries in terms of the participation of knowledge-intensive jobs in the total workforce, as well as the availability of skilled workforce in the respective countries.

This analysis was carried out using analytical and empirical research methods. In particular, statistical methods for data aggregation and processing were applied, but also comparative methods and interpretation of the results for Serbia and other selected countries were used.

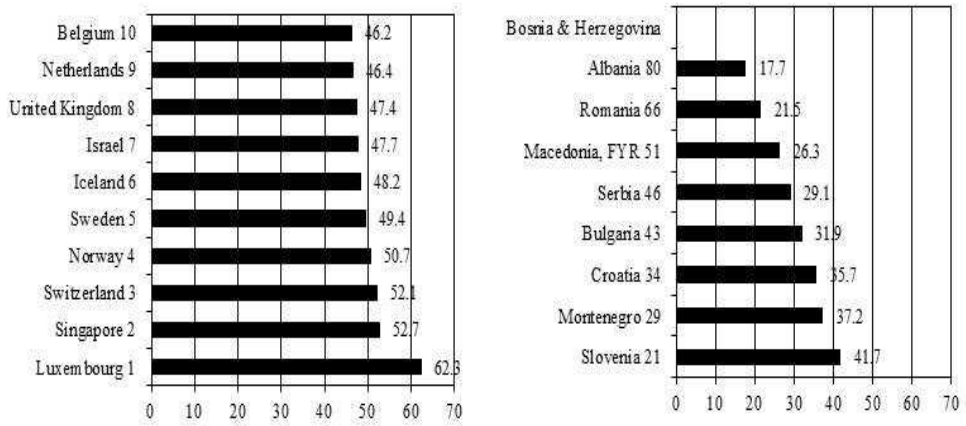
2.2. Concepts and comparisons

The demand for skills and knowledge at the level of an economy largely depends on the complexity of tasks required to be fulfilled at the workplaces in companies. In general, smaller (developed) economies have higher shares of knowledge-intensive jobs in the labour market. This can be illustrated by the WEF's *Global Information Technology Report* data when both the group of the best ranked nations (left-sided panel) and the group of selected CEE countries (right-sided panel) are observed (Baller et al. 2016). This is particularly because more pronounced diversification in production or services requires more effort directed towards innovation and knowledge. Fig. 1 shows that except for the UK the share of knowledge-intensive jobs is highly inversely correlated with the size of country

measured by the number of inhabitants. Another common feature of the best ranked countries regarding the share of knowledge-intensive jobs in the overall economy is that six out of ten are the EU countries. This is not a coincidence. The EU prioritizes incentives aiming to preserve the high level of overall productivity and activities important for the improvement of EU competitiveness and of building comparative advantages (Cedefop 2015).

Figure 1: Knowledge-Intensive Jobs as Percentage of Workforce in Selected Countries (%)

a) Ten best ranked **b) CEE countries**



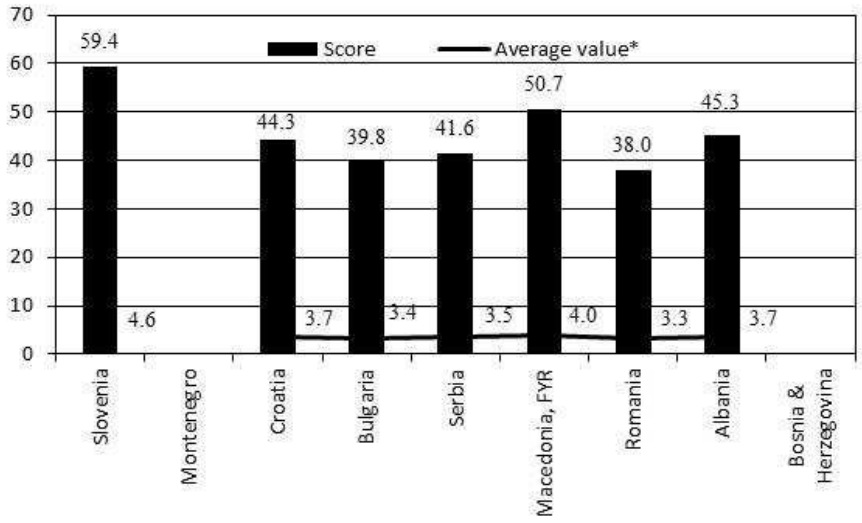
Source: Baller et al. (2016).

However, the difference between the best ranked CEE country Slovenia and the worst ranked economy of Albania is almost one quarter. This implies the existence of significant heterogeneity among the countries in this region. The WEF report does not publish data for Bosnia and Herzegovina. The data for the two first ranked countries show that the share of knowledge-intensive jobs in the economies makes up 41.7 and 37.2 percent of the total, respectively. Serbia's position is in the middle with 29.1 percent, which is 11.4 percentage points above the share for Albania and 12.6 percentage points below the share for Slovenia. On the other hand, the distance between Serbia and the best ranked world's economies is quite large, showing that the share of knowledge-intensive jobs in the Serbian labour market is almost twice lower than in the comparing countries.

Fig. 2 depicts the experts' estimates of how easy is it for the companies to find employees of adequate skills in the local labour markets on the scale from 1 (extremely difficult) to 7 (extremely easy). Based on these estimates, it seems that

the companies in Serbia are indifferent when the availability of skilled workers is considered. However, regarding comparison with other CEE countries, it can be noticed that Romania, Bulgaria and Serbia provide, on average, the lowest scores. Actually, more difficulties to find workers of required skills have reported the companies in these three countries, while, for instance, Slovenian companies experienced fewer difficulties when searching for skilled workers.

Figure 2: Availability of Skilled Employees in Selected SEE Countries



Source: Baller et al. (2016).

Note: There is no data for Bosnia and Herzegovina and Montenegro.

Based on the above argumentation it can be concluded that the Serbian labour market characterizes a shortage of the workforce of adequate skills. Given the existence of a gap between skills supply and demand, issues of sustainability and employability are of crucial importance for both the employers and employees. This will be further elaborated in the following sections.

3. RESULTS AND DISCUSSION

In this section, we use available data sources to analyse workforce skills and competencies, then how the supply matches the demand, and whether the severity of skills and knowledge gap changes in the course of transitional reforms. In particular, the topics that will be studied include workforce ageing, improvements

in educational attainment of labour market participants, employers' skills needs and occupational incidence of skills mismatches.

3.1. Workforce skills and occupations

When the total workforce is observed it can be noticed that medium-skilled labour market participants are the group that prevails among both the employed and unemployed. This group makes up 56.8 and 63.2 percent of employees and jobless persons, respectively. The second largest group are high-skilled labour market participants. This group share in the total employment is almost one quarter, while the share of high-skilled unemployed persons is 22.2 percent. A significant percentage of high-skilled among the unemployed persons is an indicator of obvious mismatch between the actual and the skills needed by the economic sectors. Serbian economy employs 18.4 percent of low-skilled workers, while this group makes up 14.4 percent of the unemployed.

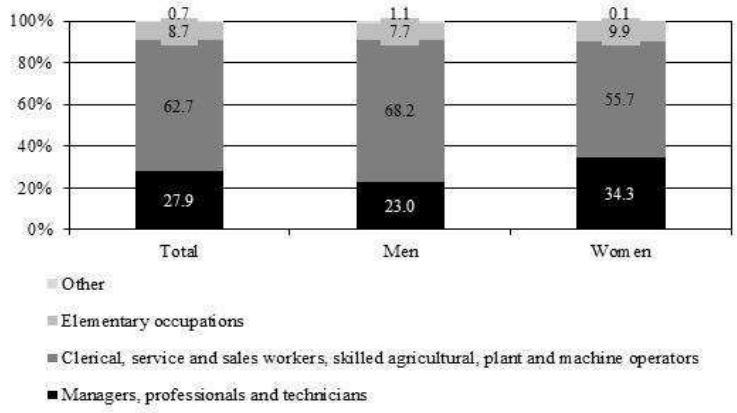
Figure 3: Level of Workforce Skills (%)

Source: RSO, LFS (2016).

Workforce skills differ by gender especially if medium- and high-skilled labour market participants are observed. As an illustration it can be noticed that both employed and unemployed men with medium-level skills make up over 60 percent of the employed and unemployed men, while this group makes up a little above one-half of the employed women. High-skilled men are much less (20.2 percent) represented among the employed than women of the same educational level (30.8

percent). In comparison with men, high-skilled unemployed women form a considerably larger portion among jobless persons.

Figure 4: Occupational Structure of Employees (%)



Source: RSO, LFS (2016).

In line with the previous elaboration is the finding that shows that the share of women in positions of managers, professionals and technicians in the organizations is 34.3 percent in the overall structure of employed women. In comparison with men, this share is more than ten percentage points higher thanks to the engagement of women in the public sector (especially in social services, health and education sectors). Proportionally, men are more represented among the occupations composed of clerical, services and sales workers, skilled agricultural workers, and plant and machine operators and assemblers than women. This is because men, compared with women, are more often employed in the sectors of agriculture, and manufacturing industry and less often among clerical and services workers which compose this broader group of occupations.

The characteristic of the labour market of most countries is the education-job mismatch. It occurs when lower-level jobs are fulfilled with high skilled job applicants due to a shortage of jobs of a required level. Analysing transition and non-transition countries, Kupets (2015) finds that in 19 out of 25 countries each fifth worker is overeducated regarding the qualifications needed for the specific job. This is further associated with the incidence of long-term unemployment and in particular with youth unemployment. Similar findings for the group of the Western Balkan countries confirm that young people who are facing first work experience need additional training in order to have more success in job matching in spite of the attained level of education (Zubović, Pavlović 2016).

3.2. Matching the supply and demand in the labour market

The Serbian labour market is characterized by large structural disparities between the supply and demand of workforce. Obvious reason lies in high unemployment. In spite of a significant drop in unemployment over the previous several years, the unemployment rate is still high and it was 15.3 percent in 2016 (SORS 2016). The unemployment is especially high among certain groups of labour market participants (including youth, women, and minorities) and the main cause is its structural character (Ognjenović 2015). Persistency of structural unemployment is the characteristic of all transition countries due in particular to rapid technological change and unreformed education and training system that cannot adequately respond to the labour market needs and inevitably induce skill mismatches (Bartlett 2013). In line with this are the results provided by Colombano and Krkoska (2009) for CEE countries that confirm that the training conducted at the company level cannot compensate for a weak level of skills in the country induced by the inefficiency of the education system. Their findings suggest that in-company training is highly positively correlated with the country level of skills development. In other words, the companies' intent to train is more pronounced in countries where the workforce has higher level of skills.

Table 1: Occupational and Skill Level of Workforce (%)

Occupational group	Unemployed			Employed		
	Educational attainment			Educational attainment		
	Low-Skilled	Medium-skilled	High-skilled	Low-skilled	Medium-skilled	High-skilled
Managers	0.0	1.6	4.7	0.2	2.2	8.5
Professionals	0.0	0.8	32.5	0.0	2.0	48.4
Technicians and Associate Professionals	0.0	8.6	18.9	0.0	12.2	18.0
Clerical Support Workers	0.0	8.4	12.9	0.9	8.2	7.8
Services and Sales Workers	13.5	33.8	20.3	6.4	21.5	7.6
Skilled Agricultural, Forestry and Fishery Workers	0.0	0.6	0.0	58.2	15.5	3.2
Craft and Related Trade Workers	20.4	18.1	4.2	7.9	16.9	2.6
Plant and Machine Operators, and Assemblers	13.5	10.7	2.0	7.0	12.3	1.9
Elementary Occupations	52.7	17.4	4.4	19.3	8.5	1.2
Armed Forces Occupations	0.0	0.0	0.0	0.0	0.8	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: RSO, LFS (2016).

Note: Occupations for unemployed persons are available only for those who had some work experience during the previous eight years.

When the unemployment is high, lack of occupation-specific skills may leave less choice to job applicants leading them to accept the lower-level jobs as it was previously elaborated. When the educational attainment of the unemployed is compared with the occupational choice, Table 1 shows that besides elementary occupations, low-skilled unemployed persons had previous work experience as services and sales workers, craft and related trade workers and plant and machine operators, and assemblers. Among the participants with the low level of education, the largest gap between the unemployed and employed is revealed in the group of elementary occupations. Likewise, the largest discrepancy in the labour market status of medium-skilled participants is identified among services and sales workers, craft and related trade workers and elementary occupations, while high-skilled unemployed persons experienced more difficulties to find employment if they had previous work experience as clerical support workers and services and sales workers. On the other hand, managers, professionals and technicians and associate professionals compose three quarters of high-skilled employees, while those three occupational groups make up more than a half of the unemployed pointing to the obvious lack of necessary skills.

The general conclusion is that the occupational choice at the workplace does not necessary follow the educational attainment of an individual. This is because someone may accept a job from necessity even if it is of a lower level than expected or because someone may attend the training not necessary certified and acquire some occupation-specific skills that moved him/her to a higher professional level.

3.3. Qualifications, knowledge and skills gaps

In general, low level of investment in training, information gaps and low mobility in the labour market are the factors which may cause skill shortages (Cedefop 2010). But, to what extent the ageing of the workforce influences skill shortages? A Cedefop study shows that the workforce ageing together with skills obsolescence causes skills gaps and skills shortages especially if reorganization or restructuring of the companies and economic sectors leads to the loss of specific skills (Cedefop 2010). Table 2 depicts two different paths of the ageing of the workforce in the Serbian labour market. The share of the young population (15-29 years of age) in the workforce decreased from 23.0 to 18.4 percent in the period 2004-2016, while the share of the prime age population and older workers (30-64 years of age) increased by 4.6 percentage points amounting to 81.6 percent in 2016. Such dynamics induce a drop in these two subpopulations ratio confirming the ageing of the workforce. The ageing also has diverse effects on the employment and unemployment of the two groups of participants showing a declining trend of the

youth share and an upward trend of the prime age and older workers in the respective contingents of the workforce.

Table 2: Ageing of Workforce

Age group	2004			2008			2012			2016		
	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed
Youth (15-29 years), in %	23.0	18.1	43.5	20.5	17.1	40.8	19.2	14.7	33.0	18.4	15.4	34.4
Prime and older (30-64 years), in %	77.0	81.9	56.5	79.5	82.9	59.2	80.8	85.3	67.0	81.6	84.6	65.6
Ratio (15-29) to (30-64)	0.30	0.22	0.77	0.26	0.21	0.69	0.24	0.17	0.49	0.23	0.18	0.52

Source: RSO, LFS (2004, 2008, 2012, 2016).

The ageing of the population and entry of the new cohorts of young people in the labour market changes the educational structure of the workforce. New generations of labour market participants have a better educational background – more graduates enter the labour market each year – but they do not necessarily have a greater chance of finding a job that matches their level of education. A comparison of the workforce education structure in the year 2004 and 2016 shows that individuals with low qualifications exited the labour market faster than those who possessed medium-level qualifications. Based on the analysis of the data in Table 3, it can be concluded that a drop in the share of individuals with low qualifications was gradually replaced by those with high qualifications, whereas the share of medium-skilled labour market participants was stable. However, a significant share of the unemployed – more than one fifth – with tertiary education is a reliable indicator of a skill gap or an individual's choice of non-perspective occupations. Some comparative studies show that individuals with medium-level qualifications are the main source of the workforce surpluses in Serbia and Croatia, whereas the labour markets of Macedonia, FYR and Montenegro suffer from the surplus workforce with low qualifications. When disaggregated educational levels are observed, for instance, data for Croatia revealed that skills shortages are characteristic of individuals with tertiary and secondary technical education. This can be considered as a common feature for most of the CEE countries (Ognjenović, Branković 2013b).

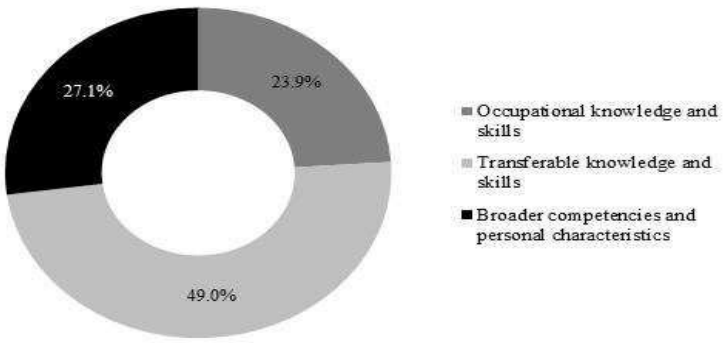
Table 3: Educational Attainment of Workforce by Years (%)

Educational attainment	2004			2008			2012			2016		
	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed
Low-skilled	26.7	27.8	22.0	25.3	26.0	20.3	20.3	20.6	19.1	17.8	18.4	14.5
Medium-skilled	57.0	54.7	67.2	57.3	55.6	68.4	59.1	56.9	66.3	57.8	56.8	63.2
High-skilled	16.3	17.6	10.8	17.4	18.4	11.2	20.6	22.5	14.6	24.4	24.8	22.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: RSO, LFS (2004, 2008, 2012, 2016).

Apprenticeship programmes are especially important for lower and medium-level occupations. In particular, they can support the transition from school to work and help young employees' to gain first work experience. Usually, apprenticeship trainings are organized through on-the-job and/or classroom learning. In the developed countries apprenticeship opportunities are mostly provided by the employers, but also publicly supported programs are available. An analysis conducted for the OECD countries shows that the incidence of apprenticeship programmes varies, covering, for instance, four percent of the workforce in Germany and barely 0.3 percent in the US (Lerman 2017). In Serbia, apprenticeship programs are provided as a part of employment plans at different administrative levels. Certain medium and high level education occupations are eligible for these programs.

Figure 5: Employers' Skills Needs



Source: NES (2016).

In the Serbian labour market, occupation-specific knowledge and skills form less than one quarter of all the skills required by the employers as shown by recent survey data (Fig. 5). Based on the Employers Survey, short-term anticipation of future needs for skills and occupations is collected by the economic sectors and regions. Transferable knowledge and skills are much more needed – the employers opted for these skills in almost 50 percent of cases. Broader competencies and personal characteristics are perceived by the employers as more important than occupation-specific knowledge and skills. These findings are in line with some previous studies that show that the employers in the CEE countries pay more attention to transferable knowledge and skills, where foreign languages and knowledge of information and communication technologies occupy a special place (Ognjenović, Branković 2013b).

Table 4 presents the occupational incidence of skill mismatches. Two groups of occupations are identified with the highest shortages, gaps and the lack of work experience – high-skilled professionals and medium-skilled services and sales workers. The employers perceived plant and machine operators and assemblers as the third ranked occupational group with skill shortages. Likewise, technicians and associate professionals are the occupational group that equally lacks skills or cannot be adequately matched to job vacancies due to working conditions or lack of previous work experience.

Table 4: Incidence of Skill Mismatch by Occupation (%)

Occupational group	Due to		
	Skills shortage	Skills gap	Working conditions, lack of experience and the like
Managers	0.4	1.4	1.3
Professionals	21.5	15.5	16.5
Technicians and Associate Professionals	3.4	6.8	8.6
Clerical Support Workers	1.5	2.9	3.8
Services and Sales Workers	59.9	56.5	49.3
Skilled Agricultural, Forestry and Fishery Workers	0.2	0.0	0.1
Craft and Related Trade Workers	4.7	6.1	7.9
Plant and Machine Operators, and Assemblers	7.0	4.0	4.7
Elementary Occupations	1.5	6.1	7.8
Others	0.0	0.8	0.0
Total	100.0	100.0	100.0

Source: NES (2016).

The level of overall productivity of an economy largely depends on the effectiveness of business climate reforms. In the case of transition and developing countries, Brixiová and Égert (2017) show that the policy reform in this area will affect the creation of sustainable businesses if they are accompanied by the well-functioning education and training system that leads to narrowing skill gaps. This will increase employability prospects of the workforce defined in terms of Hillage and Pollard (1998) as capability to get the first job, maintain employment and move to a new job if necessary. The concept of employability is tightly connected to the legal forms of employment relationships between the employer and employee and it can stipulate continues employment, in particular, if the employers have tools to assess knowledge, skills and abilities of job candidates (Cappelli, Keller 2013). Following this discussion it can be concluded that the instruments for short- and medium-term projections of occupations and skills should be in place in an economy so that policy makers and other relevant stakeholders gain insight into skills needs.

4. CONCLUSION

Particular attention in this paper has been paid to the analysis of employability skills development and how the process of matching the skills available by the workforce and the skills demanded by the employers function in the Serbian labour market. The analysis presented in this paper provides an assessment of skills gaps and skills shortages at the level of education and main occupational groups. In order to analyse the supply of skills and occupations in the Serbian labour market the Labour Force Survey data were used for selected years from 2004 to 2016, whereas an analysis of the demand for skills and occupations was carried out using the Employers Survey for 2016.

The main findings of the analysis can be summarized as follows:

- Regarding international comparison, Serbia fits among those countries of the CEE region with the average share of knowledge-intensive jobs in the overall economy. This implies that no significant improvement in productivity and innovation-led competitiveness can be expected in the short-term.

- Most challenges are related to the imbalances in the supply and demand of the workforce with medium qualifications, implying that skills gaps are mainly identified among transferable knowledge and skills in accordance with job description. Job matching policies of both those who are feeding the supply of skills and those searching for skilled workers should be focused on narrowing these gaps.

When the occupational incidence of a skill mismatch is considered, the analysis revealed that the occupational group that comprises high-skilled professionals and medium-skilled services and sales workers is the group with the highest skills shortages, skills gaps and the lack of work experience of job applicants to adequately respond to job requirements. On the other hand, technicians and associate professionals cannot be adequately matched to job vacancies due to working conditions offered by the employers or the lack of previous work experience.

There is a limited number of studies that analyse skills related issues in the Serbian labour market. The intention of this paper is to feel the existing gap and provide some preliminary findings to support policies associated with the enchantment of labour market participants' employability. Future research should be focused more on a quantitative analysis that would examine to what extent the shortage of skills causes labour market frictions, on the one hand, and what are the potential implications of skills gaps on the social and economic policy, on the other.

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