

RESEARCH OF COMPLIANCE OF HIGHER EDUCATION AND THE NEEDS OF THE ECONOMY IN SERBIA

Snežana Kirin^{1*}, Tatjana Stanojlović², Aleksandar Sedmak³, Miodrag Brzaković², Branislav Jakić²

¹ Innovation Center of the Faculty of Mechanical Engineering, Belgrade, Serbia,

² Faculty of Applied Management, Economics and Finance, Belgrade, Serbia

³ Faculty of Mechanical Engineering, University of Belgrade, Serbia

The Republic of Serbia has not built a system in which education is a function of economic development, which is why the labor market has deficit or surplus of certain professions. Therefore it is necessary to identify what are the needs, requirements and expectations of higher education according to the market requirements. To determine compliance of higher education and the needs of the economy in Serbia, the research has been performed and presented in this paper.

The needs and expectations of customers and stakeholders of higher education, Figure 1, are different and often conflicting. Therefore, it is necessary to define the needs, requirements and expectations for each category.

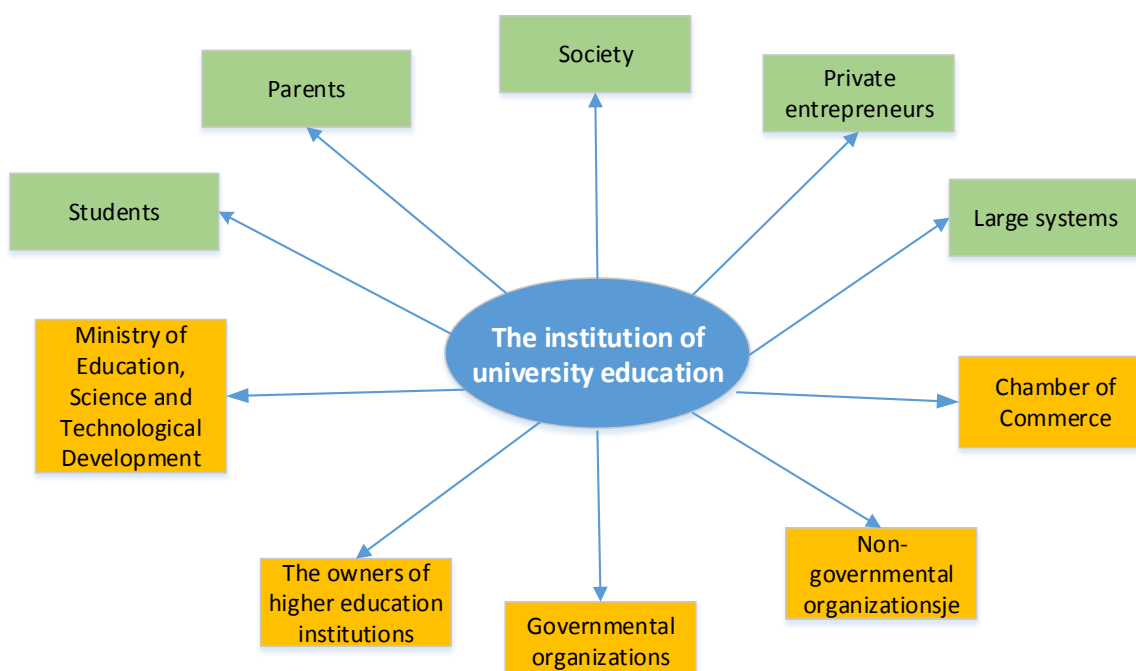


Figure 1 Stakeholders of high education institution

RESEARCH PROGRAM

The research program covered a sample of 35 economic entities both from private and public sector (small and medium enterprises, large economic systems, domestic and foreign companies), with different ownership structures, different number of employees and different economic sectors (health service, agriculture, tourism and catering, public administration, civil engineering, industry and services).

The research was conducted through a survey of employees, based on a sample of a total 138 respondents, during the period from March to July 2013. The results are classified according to the organization, gender, educational structure, length of service, age, position in the organization.

Independent variables

There were five age categories: up to 25; 25-34; 35-44; 44-55 and over 55 years.

Five categories of educational level were observed: Primary school; secondary school; bachelor degree; master degree and PhD (Doctor of Science).

The position in the organization was observed through five categories: worker; expert; lower-level managers; middle-level managers and top-level managers.

The length of service was observed through five categories: up to 5 years; from 5-10; 10-20; 20-30 and over 30 years.

The job profile was observed through 24 different jobs.

Dependent variables

The research has included following dependent variables:

- satisfaction with knowledge
- satisfaction with communication,
- satisfaction with applying knowledge,
- satisfaction with position,
- satisfaction with advancing based on the knowledge
- satisfaction with teamwork,
- satisfaction with skills,
- satisfaction with transfer of knowledge.

There was a questionnaire made up for the research needs, with dependent variables observed in two states, **the current one and the desired one**. For each question there were five offered answers representing attitudes according to **Likert** scale:

1. **I strongly disagree,**
2. **I do not agree,**
3. **I do not have an opinion (undecided),**
4. **I agree,**
5. **I strongly agree.**

The degree of satisfaction we have observed through categorical scale:

1- very dissatisfied; 2- dissatisfied; 3- neutral; 4- satisfied; 5- very satisfied.

SAMPLE DESCRIPTION

Sample comprises 138 respondents with the education, age, professional and sex structure, as follows.

Educational structure: 2% of the respondents have primary school, 41% have high-school education, 43% have higher education and 14% have master degree.

Age - The highest percentage of the respondents (38%) is between the age of 35 and 44, 33% are between the age of 25 and 34, whereas only 4% of the respondents are up to 25 years of age, 17% are between 44 and 55 years old, and 8% of them are over 55 years old.

Length of service - 19% of the respondents have less than 5 years of service, 27% have 5-10 years of service, 30% have 10-20 years of service, 16% have 20-30 years of service and 8% have more than 30 years of service. It may be noted that 75% of the respondents are under the age 45 years.

Position in the organization: 50% of the respondents are in the position of a top-level manager, 20% are middle-level managers, 13% are lower-level managers, 12% are experts, whereas only 5% are workers. As much as 83% of the sample are managers.

Professions - economists are present with 46% of all the respondents, philology with 1%, legal branch with 12%, technical with 14%, medical with 1%, organizational (administrative) with 5%, and other with 20%.

Ownership structure - According to the sample data, the highest incidence of respondents is that of LLC - 30%, 27% of them are from public utility companies (public agencies and organizations), 21% are from joint-stock companies, and 22% of the respondents are from private enterprises.

Gender - The incidence of female respondents in the sample is significantly higher than that of the male respondents: 67% versus 33%.

RESULTS

To answer the question „what workers need to change in order to workflow performed in a satisfactory manner“, subjects responded as it is presented in figure 3.

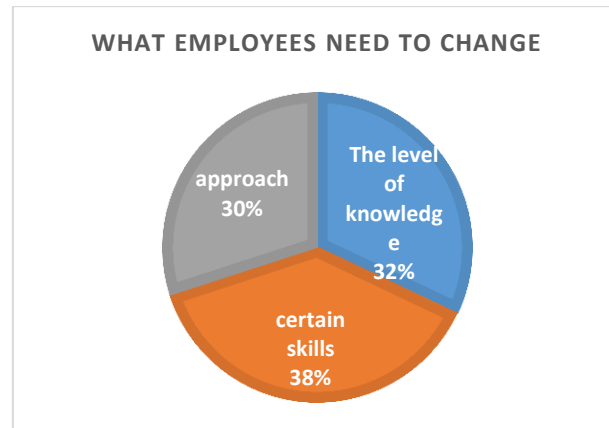
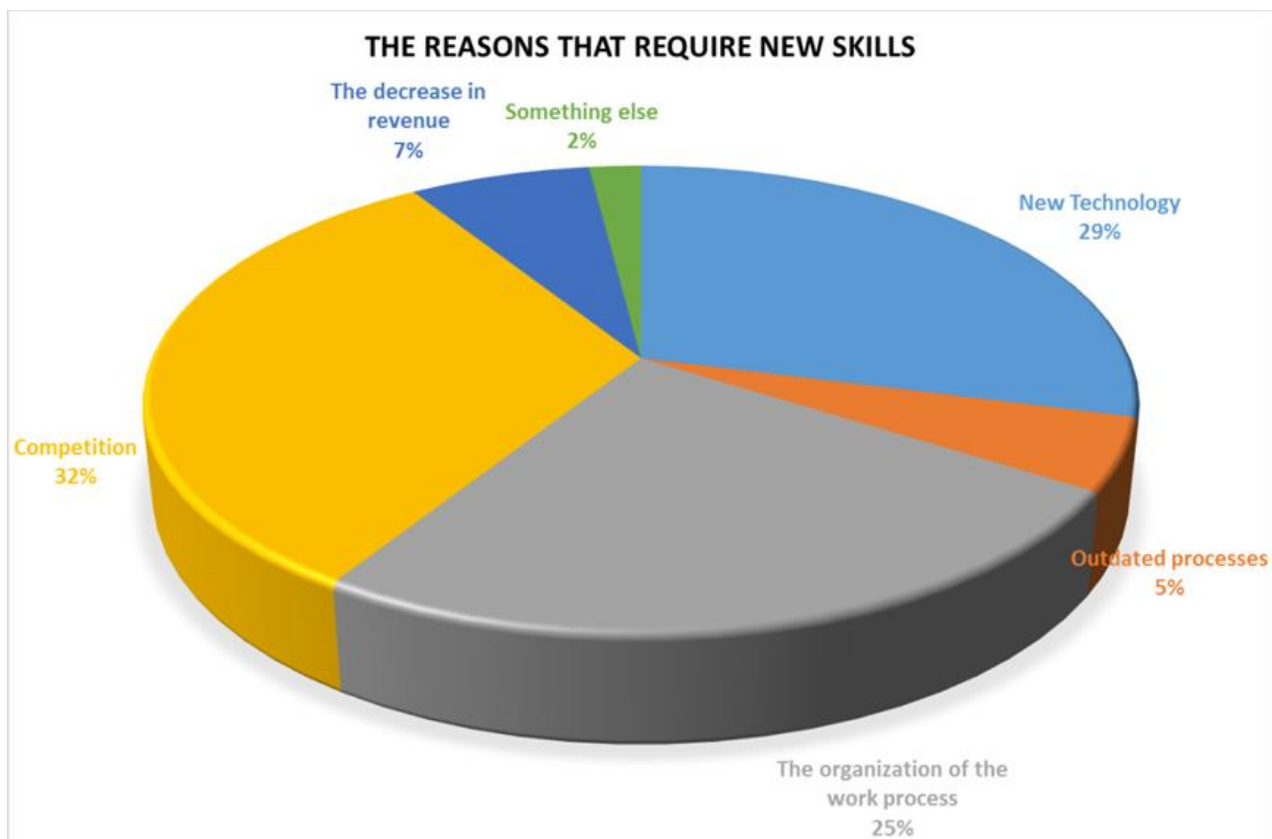


Figure 3. What employee need to change

It can be seen that 38% of the respondents believed it should improve skills, 32% of the respondents felt that it should change the level of knowledge, i.e. improve it and to adapt to new conditions, while 30% of respondents thought that should change "soft skills" and his/her approach to business. The reasons why it is necessary to introduce changes are indicated in the figure 4.



On the research question: What professions will be the most wanted in the next five years in the organization, respondents were chosen largely for occupations:

- Mechanical Engineer,
- Engineer of Computer Science,
- Sales Manager and
- Construction engineer.

It is interesting fact that three of the four identified future profiles, profiles of the learners in technical colleges.

Figure 5 presents satisfaction with level of knowledge, skills, communication, teamwork and transfer of knowledge in relation of job profile.

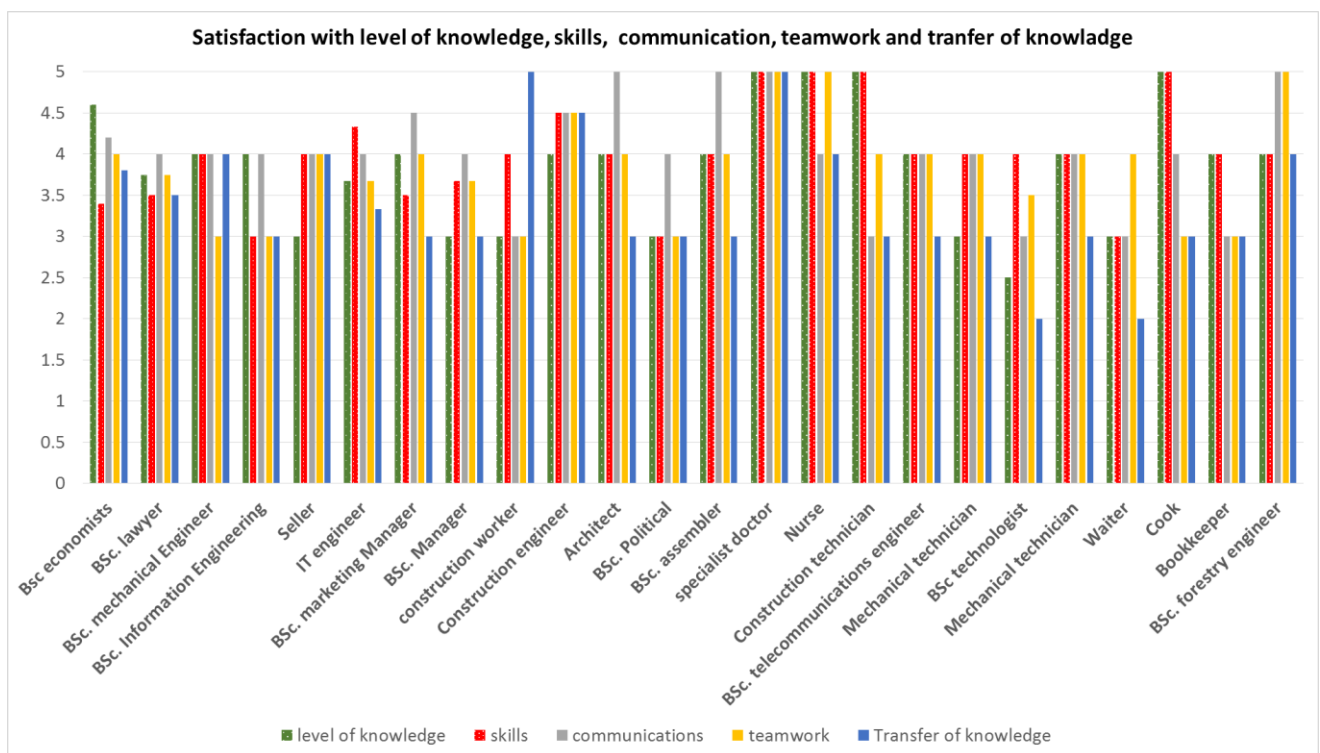


Figure 5 Satisfaction with knowledge and skills

CORRELATIONS

In order to establish relationship between independent variables: education levels, age structure, job position and longevity and dependent variables: satisfaction with knowledge, satisfaction with knowledge of foreign languages, satisfaction with computer skills, communication skills, initiative, application of knowledge and advancement, we calculated the Pearson’s coefficients of correlation.

Pearson correlation

	Education	Age	Position	Length of service
Knowledge	.182(**)	0.029	0.095	0.055
Foreign language	.305(**)	-.229(**)	0.063	-.149(**)
Computer	.233(**)	-.141(**)	.128(*)	-0.043
Communication	0.009	0.093	0.06	.147(**)
Initiative	0.078	.132(*)	.193(**)	.164(**)
Application of knowledge	-.119(*)	0.072	0.066	0.096
Knowledge-position	-.124(*)	0.026	-0.023	-0.053
Higher education better position	-.206(**)	0.03	-0.071	0.008
Advancement by knowledge	0.091	-0.005	.254(**)	-0.035

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

According to Cohen (1988), if r is between 0.1 and 0.29 it is about weak correlation; if r is between 0.3 and 0.49 it is about medium correlation and if r is between 0,5 and 1,0 it is about strong correlation, results of correlation indicate:

- Weak positive correlation between satisfaction with knowledge and education level ($r = 0.182$).
- Medium strong positive correlation between education level and satisfaction with knowledge of foreign languages, ($r = 0.305$) and weak positive correlation between education level and computer skills, ($r = 0.233$).
- Weak negative correlation between the satisfaction of computer skills ($r = -0.141$) and knowledge of foreign languages, ($r = -0.229$) and the age structure, which means that older employees are less satisfied with the knowledge of foreign languages.
- Weak positive correlation between satisfaction with communication and job longevity ($r = 0.147$), indicating possibility of communication skills development.
- Weak positive correlation between age and the length of service and satisfaction with initiative ($r = 0.164$).
- Weak negative correlation between formal education and practical application of knowledge ($r = -0.119$) indicating low applicability of what has been learnt.
- Weak negative correlation between formal education and attitude that it enables better job position at work ($r = -0.206$). This indicates the need for development of other, unformal skills and knowledge.
- Weak correlation of work position and advancement related with knowledge ($r = 0.254$).

In order to analyze the relationships between satisfaction with position, promotion, participation in decision-making and perception of the progress we have observed a correlation between the dependent variables, table 3.

Table 3: Pearson Correlation between dependent

Pearson Correlations			
	Decision making	More knowledge better position	Progression by knowledge
Higher education better position	0.1	.590(**)	.442(**)
Progression	.196(*)	.435(**)	.617(**)
N	138	138	138

We have got a strong positive correlation

- between the attitude in which the higher formal education provides a better position and the attitude that more knowledge provide a better position, ($r = 0.590$),
- between the satisfaction with progression and the attitude that progression is rising by improving knowledge, ($r = 0.617$)

We have got the medium positive correlation

- between the satisfaction with progression and the attitude in which more formal knowledge provide a better position, ($r = 0.435$)

We have got the weak positive correlation between the satisfaction with participation in decision-making and satisfaction with progression in work.

CONCLUSION

Results of recent research, e.g. Kottmann and De Weert's (2013), show that the increase in the unemployment rate in the OECD area significantly influenced the mismatch between professions offered by education policy and demand in the labor market.

The current structural and technological changes in the economy prefer employing staff capable of quickly adapting to new changes.

Results of the research presented in this paper are similar, indicating the need to continuously improve our education system with some hints how to do it.