

Youth Graduates Employment Country Studies of Albania and North Macedonia in Economics Programs

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Abstract

Albania and North Macedonia, as many countries in South-Eastern Europe, struggle with youth unemployment which is persistent, acute and unresponsive to the education of young people in both countries. High school graduates often decide to continue university education for better job perspectives and advancement. High education is often perceived as a guarantee for employment. But statistics show that youth employment faces many challenges and has higher rates compared to other categories of the population. Therefore it is the aim of this study to address a general panorama of the graduated youth employment and unemployment through two case studies: Luigj Gurakuqi (LG) the University of Shkodra in Albania and South-East European (SEE) University in North Macedonia. A framework of comparative analysis with focus investigation of the employability of youth in Albania and North Macedonia is presented. Special attention is given to the economics cohorts of students graduated in the last decade. Questionnaires are delivered to this category of graduated students of two universities. Qualitative and quantitative analyses are presented giving an overall view with the specifics of each university. A statistical technique as logistic regression analysis is used to estimate the correlation between employment/unemployment and the various explanatory variables. Regression analyses of the graduated student's questionnaires of the LG University in Albania and SEE University in North Macedonia show that the GPA of the bachelor program plays an important role in being employed. While only LG University questionnaires results show relationship of variables as gender, time of graduation, and master education level to the employment status of the graduates students.

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Introduction

Educational attainment is a strong predictor of long-term unemployment and economic inactivity, especially among the youth (Milovanovitch, 2019). Albania and North Macedonia, as many countries in South-Eastern Europe, struggle with youth unemployment which is persistent, acute and unresponsive to the education of young people in both countries. Between 2010 and 2017 an average of 51.3% of young people in North Macedonia were unemployed and the gap in unemployment of adults and young people has widened since 2010 (Milovanovitch, 2019). Youth are more likely to be unemployed and underemployed because of lack of experience in job searching, less powerful in wage bargaining, less financially secured and as a result, they are more likely to accept underpaid jobs that do not match their skills (Petreski et al., 2019). Albania had a lower rate of youth unemployment than North Macedonia between 2010 and 2017 (32.4%).

According to Stojanovski et al. (2018), in 2015 there were 140 registered Higher Educational Institutions (HEI) in Western Balkans with 5213 study programs. Albania has the biggest number of the study programs (1,757) and Macedonia has the largest number of bachelor (BA) study programs (82, 6 % of all study programs are at the BA level) (Stojanovski et al., 2018). The biggest challenge of higher education is insufficient investment in education by the state. Higher salaries for professors, greater funding for research and investment in labs and information technology would increase the quality of education (Stojanovski et al., 2018) and hence enhance the employability of graduates in these turbulent economic situations.

The research study is focused on the presentation of the two countries demographic characteristics, labour force employment and unemployment rates according to the categories of the population with special emphasis on the youth labour market. Tertiary level public education expenses over the years are presented for Albania and North Macedonia public universities. The research questions presented in this study are: RQ1: Does gender effect student's employment?; RQ2: Does age effect student's employment?; RQ3: Does civil status effect student's employment?; RQ4: Does master education level effect student's employment?; RQ5: Does GPA of the bachelor studies affect student's employment? Econometric models and analyses are performed in function of the above research questions.

Background

Economic and Demographic Overview

Albania and North Macedonia are two small countries located in the western Balkan geographical area. The countries are characterised by similar economic and demographic factors. Both countries have experienced the long centralised economic system for almost half a century. The free market economic system was established only after the 1990-s. The following years have been associated with high rates of population emigration and low employment rates, especially during the first decade. Countries have experiences not stable economic growth rates and low GDP per capita compare to other European countries (Table 1).

Table 1

Countries macroeconomic indicators, 2019

Indicators	Albania	North Macedonia
Population (in mln)	2.86	2.08
Real GDP growth (in %)	3.81 (3-rd Q)	3.5
GDP per capita (euro)	4,680	5,462
Employment (in %)	60.7 (3-rd Q)	47.4 (3-rd Q)

Source: Ministry of Finance and Economy, Albania. Ministry of Finance, North Macedonia and State Statistical Office, North Macedonia.

Countries are characterised by small population number and young median age population. The median age is 36.4 years in Albania and 39.1 years in North Macedonia (United Nations, 2019). While the median age of the entire EU population stands at 42.6 years (Eurostat, 2019).

Although economic and labour market performance differs between selected countries, they have in common many challenges as all the western Balkan countries. Labour market of the western Balkan countries may be characterized by low participation and employment rates (Table 2). They share the problem of high unemployment rates compare to other European countries (Table 3).

Table 2

Employment rates of west Balkan countries (15-64 years), 2019

EU (European Union 28)	73.1%
Albania	61.4%
Bosnia and Herzegovina	35.2%
Croatia	62.2%
Kosovo	30.7.8%
North Macedonia	48.1%
Montenegro	47.5%
Serbia	49.7%

Source:CEIC, Eurostat; Statista; Countries Employment/Unemployment Rates; ILOSTAT; SDG indicators; OECD.stat.

Table 3

Unemployment rates of west Balkan countries (15-64 years), 2019

EU (European Union 28)	7.4%
Albania	12.34%
Bosnia and Herzegovina	18.4%
Croatia	6.64%
Kosovo	25.7%
North Macedonia	21.55%
Montenegro	16.07%
Serbia	13.48%

Source:CEIC, Eurostat; Statista; Countries Employment/Unemployment Rates; ILOSTAT; SDG indicators; OECD.stat.

More than half of the labour force is employed in Albania, Croatia, Montenegro and Serbia. While the situation is worse in Kosovo with only 24.8% of the labour force employed. The unemployment rates of Kosovo, Bosnia Herzegovina and North Macedonia are higher compared to other countries. While Albania, Montenegro

and Serbia have approximately the same rates of 17%; and Croatia slightly in better positions with 16.2%.

Youth unemployment was high and persistent in Western Balkan countries. Although the rate fell to 35% in 2018, it was twice as high as the EU average (The Vienna Institute for International Studies, 2019). Comparing youth unemployment rates with the EU-28 average, it may be concluded that youth in the EU countries are more likely to get a job than their peers from the Western Balkans (Table 4).

Table 4

Youth unemployment rates of west Balkan countries (15-24 years), 2019

	2015	2019
European Union 28	20.3	14.9
Albania	39.8	28.63
Bosnia and Herzegovina	62.3	46.12
Croatia	42.3	17.82
Kosovo	57.7	48.92
North Macedonia	47.3	44.74
Montenegro	37.6	29.11
Serbia	43.2	32.23

Source: Statista; Trading-Economics; Countries statistics; ILOSTAT; SDG indicators; OECD. stat.

Trends in High Education and Youth Labour Market

Tertiary education is considered a crucial pathway for a better job or higher-paid salary perspectives. Therefore during the past decade, there have been unprecedented growths in most of the countries (OECD, 2018) tertiary education indicators. Large indicators of student's enrollments, graduation rates of tertiary education demonstrate increasing phenomenon, as well as the economics of the labor market of graduated students. Youth education focus has been the agenda of many global institutions (OECD, 2017; UNESCO, 2017) and the work studies of many authors (Dolado, 2015; Owens, 2017).

As per the importance of tertiary education as a pathway, through which young people can succeed in life, demand for tertiary education is still high. This is because employment of young tertiary-educated adults has advantages over young upper secondary education adults (UNESCO, 2016). Despite the large supply of graduates, the demand for tertiary education is still strong. Studies have shown that the category of graduates' worker is more affected by unemployment phenomenon during the economic recessions. In the EU as a whole, during the economic recession of 2008-2009, rates of unemployment among those with tertiary education qualification were higher than those with primary or secondary qualifications (Bell & Blanchflower, 2011).

Although after 30 years of the free capital market economy, both countries experienced high unemployment rates, especially in the youth population category. The figure below shows the employment rates of labour force demographic categories. Despite recent economic growth, the Macedonian labour market is characterised by high and persistent unemployment that suggests chronic structural problems. The average unemployment rate for the period from 2004 to 2018 was 30.4%. The unemployment data from the LFS show that the younger population from 15 to 24 years of age display the highest unemployment rate but also the highest decrease in unemployment rates in the total labour force (Table 5). The unemployment rate is lowest in the group with a level of completed education above secondary school and highest in the group with only up to the primary level

of education. Differences in unemployment rates among levels of education are similar for males and females; however, females display slightly higher rates. The very low level of demand for labour in Macedonia may suggest that employers select workers with the highest level of education (Zulfiu Alili, 2016).

Table 5

Unemployment rate (%)

Age group	Albania (Q3.2019)	Age group	North Macedonia (2018)
Total		Total	
15-29	21.4%	15-24	45.4%
15-64	11.8%	15-64	21.0%
Male		Male	
15-29	20.6%	15-24	46.6%
15-64	11.9%	15-64	21.5%
Female		Female	
15-29	22.4%	15-24	43.2%
15-64	11.8%	15-64	20.1%

Source: Instat, Labour Force Surveys 2014-2018; ILOSTAT; SDG indicators.

Methodology

Questionnaires are delivered to students' cohorts of LG University and SEE University graduated in the last decade. The cohort of students graduated during the academic years 2009 until 2019 responded to the questionnaires during February and March 2020. The questionnaire is organised in three sections: the first section giving overall description as to age, gender, labour status, etc.; the second section is answered by employed graduates, and the third section is answered by the unemployed graduates. There have been 175 answers from graduated students of faculty of Economics of LG University and 92 answers from SEE University. Both universities' students pertain to the age category 21-30 years old. Descriptive statistics of the questionnaire's results are presented. A multivariate logistic analysis is performed for evaluation of the relationship between predictor variables and graduate's employability.

Logistic regression is also known as the logit regression or logit model is a statistical technique used with sigmoid function. The logit regression it's an S-shaped curve that can take any real-valued number and map it into a value between 0 and 1, but never exactly at those limits. It is named so because it uses Sigmoid curve or function which is of "S" shape and is a special case of logistic function whose equation is: $f(x) = \frac{1}{1+e^{-z}}$. In logistic regression, the dependent variable is a binary variable that contains data coded as 1 (yes, success, etc.) or 0 (no, failure, etc.) (Gareth et al., 2013; Harrell, 2015; Pohar et al., 2004).

Often referred to as a binary classifier it is used when the dependent variable has two possible outcomes and is categorical. It works with binary data and is used in our model to estimate the probability of the employability of the graduate's students and answers 1 employed and 2 not-employed. The "log-odds" of the dependent variable's probability is modelled by a linear combination of independent variables:

$$\text{logit}(p) = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_kX_k \quad (1)$$

The **logit** function is defined as the logged odds of probability **p**:

$$\text{logit}(p) = \ln(\text{Odds}_p) = \ln\left(\frac{p}{1-p}\right) \tag{2}$$

The exploratory variables in our model are gender, age, civil status graduation year of the students, education level and GPA of graduates. The model is validated for accuracy and precision. The confusion matrix (Chawla et al., 2002) and receiver operating characteristic (ROC) curve are used for testing the model performance. These are standard techniques for summarising classifier performance over a range of trade-offs between true positives, false positives and error rates (Sweets, 1988).

$$\text{TPR / Recall / Sensitivity} = \frac{\text{TP}}{\text{TP} + \text{FN}} \quad \text{Specificity} = \frac{\text{TN}}{\text{TN} + \text{FP}} \quad \text{FPR} = 1 - \text{Specificity} \tag{3}$$

$$= \frac{\text{FP}}{\text{TN} + \text{FP}}$$

Where:

TP-True Positives

TN-True Negatives

FN-False Negatives

FP-False Positives

R statistical software is used for model econometric analyses.

Results

Descriptive analyses of the LG University

The questionnaire was responded by 62.8% of graduate female students of which 44.5% were employed. This result shows a higher graduate number of female gender compare to male graduate students of 37.2% from which 61.8% employed. Results indicate higher percentage of male employment compare to female graduate students (Figure 1, Figure 2).

Figure 1
Employment status by age categories, LG University



Source: Author's illustration

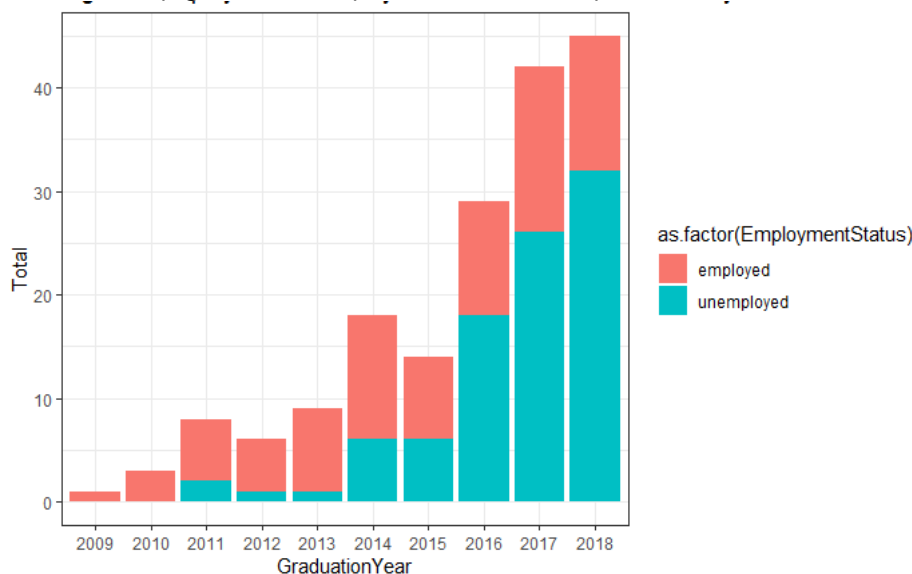
Figure 2
Employment status by education programs, LG University



Source: Author's illustration

The employment status of the graduated students shows that 47.4% of them are employed, while 52.6% are unemployed. The dominant age category of unemployed graduate students is the age category 21-25 years with 62.8% (Figure 3).

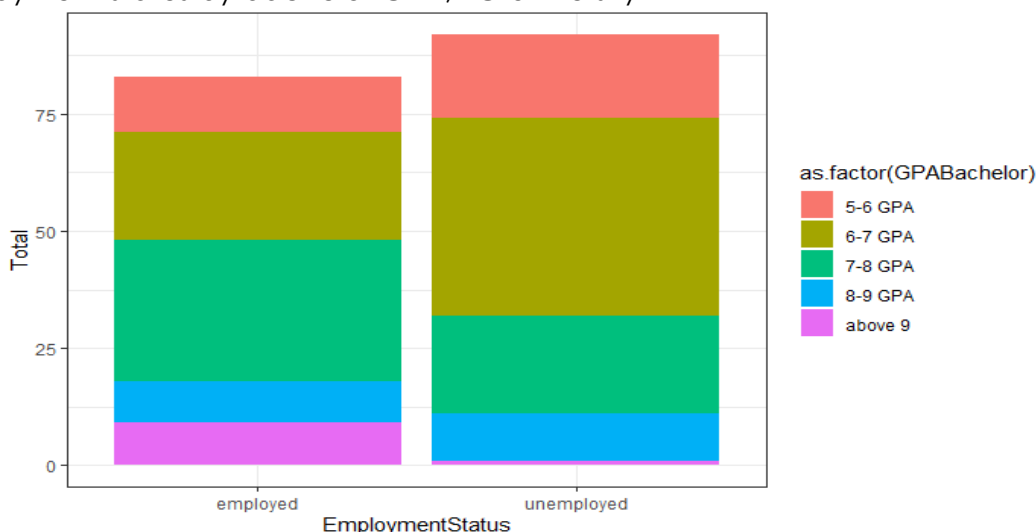
Figure 3
Employment status by graduation year, LG University



Source: Author's illustration

The employment status of graduate students is related significantly with time. The number of unemployed students is high, a short time after graduation, while it is reduced with the passing of the years. The employment status of graduates' students depends on the GPA of the bachelor studies. The figure 4 shows that the excellent graduates with above 9 GPA are mostly employed, while the graduate students with 5-6 passing GPA are mostly unemployed.

Figure 4
Employment status by bachelor GPA, LG University



Source: Author's illustration

LG University logistic regression results

The logistic model results indicate that the explanatory gender and age variables are both significant at 1%% probability (Table 6). These variables contribute to the accuracy of the employment model. Besides, the education variable of graduated master students is significant at 5%; while attending regularly the master studies is not significant to the model. The GPA of bachelor program indicates an important role in the employment of graduates with a significance level of 95%; with emphasis on the 7-8 and above 9 GPA. The civil status of graduates single or married is not significant to the model.

Table 6
LG University regression model coefficients

	Estimate	Std. Error	z value	Pr (> z)
(Intercept)	1.7854	0.6553	2.725	0.00644**
Gender Male	-1.1545	0.3894	-2.964	0.00303 **
Age 25 - 30 years	-1.2527	0.4688	-2.672	0.00754 **
Civil Status Single	-0.1156	0.4927	-0.235	0.81455
Regular attending Master studies	-0.2176	0.4045	-0.538	0.59066
Education Master	-1.1230	0.4995	-2.248	0.02457 *
GPA Bachelor 6-7 GPA	-0.2301	0.5171	-0.445	0.65625
GPA Bachelor 7-8 GPA	-1.0590	0.5316	-1.992	0.04637 *
GPA Bachelor 8-9 GPA	-0.2974	0.6691	-0.444	0.65671
GPA Bachelor above 9	-2.7977	1.1856	-2.360	0.01828 *

Note: ** statistically significant at 1%; * 5%

With 99 percent of significance the below variables are interpreted as follows. The impact size of the logistic regression coefficients is translated into odds ratio. To convert **log-odds** to **odds**, we should take the exponential on both sides of the equation which results, for example, the gender variable: $\frac{\text{Odds Unemployed/Male}}{\text{Odds Unemployed/Female}} = e^x$.

If all other variables are the same, the coefficient of the gender male variable $x = -1.1545$ can be interpreted as the odds of males being unemployed over the odds of females is $e^{-1.1545} = 0.315$. In terms of ages, the odds of males being unemployed is 31.5%; or 68.5% lower than the odds of females, holding all other variables fixed. The age explanatory variable coefficient is -1.2527 , the odds of 25-30 years graduated student of being unemployed is 0.286 or 71.4% lower to a 20-25 years graduate student, holding all other variables fixed.

With 95% significance the below variables are interpreted:

The education level of graduated students in master program coefficient is -1.1230 , that means that students that have finished master have the odds of being unemployed of 0.325 compare to the graduates in bachelor; or 67.5% lower than the odds of the graduate's students in the bachelor program. Attending regularly master studies has no significance in the model. Students graduated in bachelor with 7-8 GPA have the odds of being unemployed at 0.345 or 65.5% lower to other graduate students odds. While students graduate with GPA above 9 have the odds of being unemployed at 0.061 or 93.9% lower of the odds of the other graduate students- that is a plausible result. On the other side, the 8-9 GPA of the graduate students is not significant at the model and compose an atypical result.

The model performance on precision and accuracy is tested with two metrics classifiers: the confusion matrix and the ROC index. The predicted values of the model to the actual values of the dataset is presented to the below confusion matrix table (Table 7). The results of the table show 48 predicted employed graduate students (in the model) that are employed (in the data set) and 75 predicted unemployed graduate students that are unemployed; while the model fails in predicting 35 employed graduates presenting as unemployed and 17 unemployed graduates presenting as employed. The accuracy index of the model performance on this dataset is 0.703 (the ratio of $(TP+TN/Total)$) presenting a relatively accurate model.

Table 7

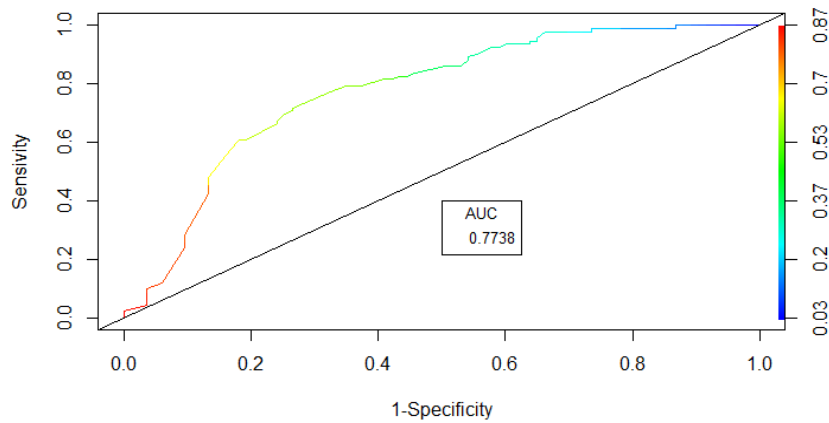
The confusion matrix table

p	employed	unemployed
employed	4817	
unemployed		3675
Accuracy	Cutoff. 105	
0.7257143	0.5738814	

Author's work

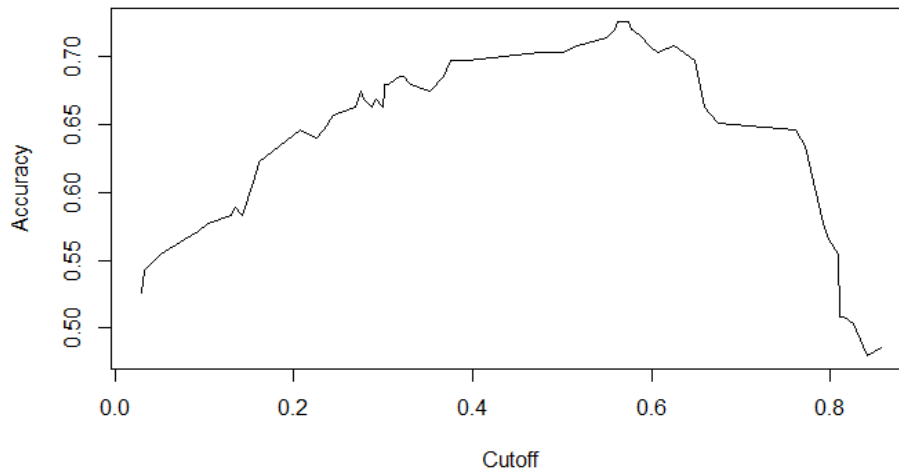
To make use of the accuracy values of the model, the ROC curve is presented (Figure 5). A useful tool in predicting the probabilities of the binary outcomes employed not employed is the ROC. The plot below shows how good the model is at predicting the positive outcome when the actual outcome is positive. The accuracy of the test is 0.7257, which is a good index for model accuracy (Figure 6).

Figure 5
ROC curve, LG University Model



Source: Author's illustration

Figure 6
Accuracy Test, LG University Model

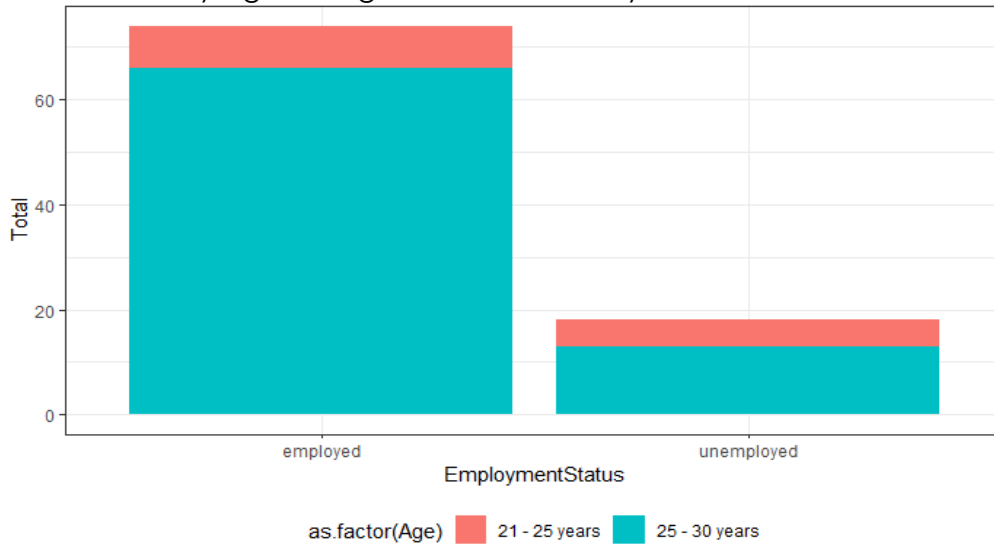


Source: Author's illustration

Descriptive analyses of the SEE Universities graduate students

The number of respondents was 137 of whom 92 respondents wherein the category 21-30 years old. Male respondents are 52% and 85 % of them are employed. Analysing the employment status of the SEEU graduates the data show that 85% are employed and most of them (84%) are from 25-30 years old. Data show higher percentage of male employment compare to female graduate students (Figure 7 and 8).

Figure 7
Employment status by age categories, SEE University



Source: Author's illustration

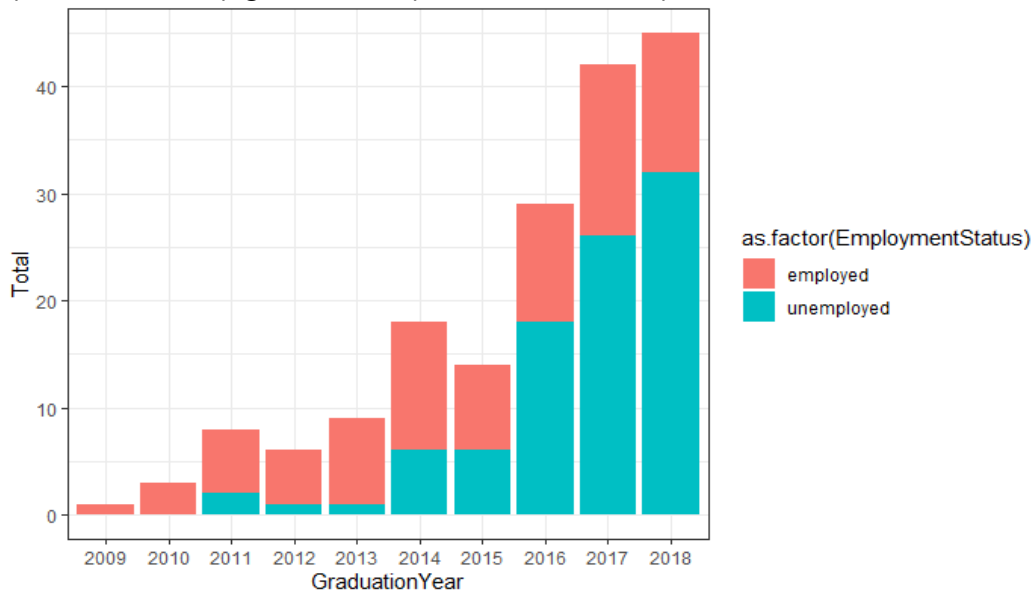
Figure 8
Employment status by education programs, SEE University



Source: Author's illustration

The employment status of the graduate students is related significantly with time as in the case of LG University. Graduates need time after completing their study to find a job. As can be shown from Figure 9 there are higher unemployment rates of the graduated students in recent years.

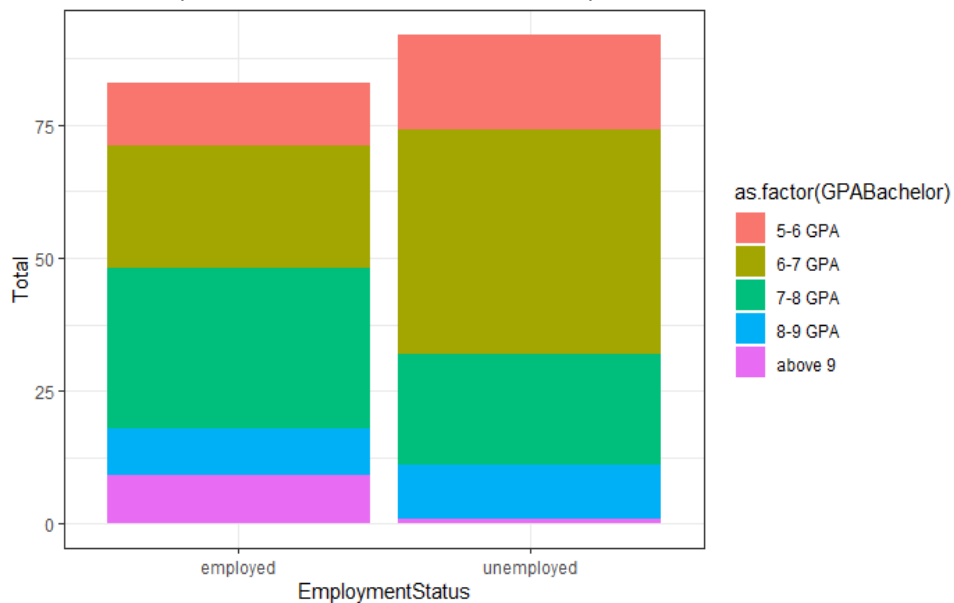
Figure 9
Employment status by graduation year, SEE University



Source: Author's illustration

The GPA of bachelor studies has an impact on the employment status of graduates. Graduates with above 8 GPA are mostly employed, while the graduate students with 5-6 passing GPA are mostly unemployed (Figure 10).

Figure 10
Employment status by Bachelor GPA, SEE University



Source: Author's illustration

SEE University logistic regression results

The regression model of the SEE University in North Macedonia shows no significance of all independent variables included in the model. An exception is the GPA variable; specifically the 8-9 GPA of the graduates' students with 10% level of significance in the model, which is relatively low (Table 8).

Table 8

SEE University regression model coefficients:

	Estimate	Std. Error	z value	Pr (> z)
(Intercept)	1.0911	1.0209	1.069	0.2852
Gender Male	0.3348	0.4942	0.677	0.4981
Age 25 - 30 years	-1.2530	0.6620	-1.495	0.1350
Civil Status Single	-0.3341	0.6620	-0.505	0.6138
Education frequenting Master studies	0.3849	0.6671	0.577	0.5640
Education Master	0.1931	0.5940	0.325	0.7451
GPA Bachelor 7-8 GPA	-0.4979	0.7307	-0.681	0.4956
GPA Bachelor 8-9 GPA	-1.4701	0.7886	-1.864	0.0623
GPA Bachelor above 9	-1.2053	0.8429	-1.430	0.1527

Note: ** statistically significant at 1%; * 5%

As almost all probabilities of the included variables show no significance for their inclusion in the model there is any reason to test the model performance for sensitivity and with accuracy index.

Reasons for not finding a job

The main reasons for not finding a job are ranked as low labour market demand for both graduates of the two universities; followed by no information for vacancies and no efficiency of government labour offices; demand of work experience from the employer; personal life interests as child growth or elderly care; high supply of graduates in the labour market and interest in a personal start-up business (Table 9).

Table 9

Reason for not finding a job

	LG university	SEE universit y
The demand for experience from the employer	10 %	22 %
High supply of graduates in the labour market	7 %	6 %
Interested in personal start up business	2 %	6 %
Low labour market demand.	56 %	22 %
No information for vacancies and no efficiency of government labour offices, etc.	16 %	22 %
Other interests as child growth, elderly care, etc.	9 %	22 %

Source: Author's work

Education efficiency in finding a proper job is perceived differently from the graduates of two universities. At LG university, 25% of the graduates consider education, not a factor in finding a proper job, while of the same opinion are 17% of the counterparts of SEE university. While education is considered a very much efficient factor in finding the proper job from both countries universities' graduates with approximately 27 to 28% of employed students.

One of the main causes of not finding a proper job that matches with the finished education is perceived the passive government education reforms, which create surpluses and shortages of graduates at the labour market. This is followed by the lack of work experience of graduate's students required from the employers, the economic crises, etc (Table 10 and 11).

Table 10
Education efficiency in finding a job

	LG university	SEE university
Not at all	25 %	17 %
A little	7 %	22 %
Enough	20 %	33 %
Much	21 %	0 %
Very much	27 %	28 %

Source: Author's work

Table 11
Reasons for job mismatching with education

	LG university	SEE university
Economic crises	16 %	14 %
No government education reforms accordingly to the labour market demand (surpluses and shortages of graduates by field of study)	35 %	35 %
No work experience.	20 %	18 %
Not the efficiency of government labour offices, etc.	11 %	8 %
Other	9 %	16 %
Youth work refusal	9 %	9 %

Source: Author's work

Conclusion

The study offers an overview of the labour force employment and unemployment rates of the West Balkan countries. Focus is given to survey analyses of tertiary graduates students especially at economics programme at LG and SEE universities of Albania and North Macedonia. The conclusions of the study are as follows. The unemployment rates are higher in the west Balkan countries compared to the average of European countries. The unemployment rates of the youth categories 20-30 years are higher compared to the older age categories of countries' statistics. Employment of graduated youth is a challenge towards the countries local labour market demand, the divergence between education and job positions, etc. Passive government education reforms to the labour market demand have consequences in surpluses and shortages of graduates by field of study.

Regression analyses of the graduated student's questionnaires of the LG university in Albania and SEE university in North Macedonia show that the GPA of the bachelor program plays a crucial role in being employed. While LG university logit model results shows some variables influences to the graduate's employment. There is a relationship between the gender and employment status of the graduates students. Males have higher probabilities of being employed compare to their counterparts females. Time plays a crucial factor in the employment. Students of age category 25-30 years have lower probability of being unemployed compare to the younger category 21-25 years. The education level of the finished program has an important role. Students graduated at the master program have lower probability of being unemployed to students graduated the bachelor program. While being enrolled and frequenting the master studies has no effect in the students employment status. Students with high GPA at the bachelor program have higher probabilities of being employed compare to lower GPA-s students.

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