

Factors Influencing The Wage Expectations Among Macedonian Students: A Comparative Perspective With The EU Students

Marija Andonova

Bld "Treta Makedonska Brigada" -60
School of Business Economics and Management
University American College-Skopje, Macedonia
e-mail: nacova@uacs.edu.mk

Nikica Mojsoska-Blazevski

Bld "Treta Makedonska Brigada" -60
School of Business Economics and Management
University American College-Skopje, Macedonia
e-mail: nikica@uacs.edu.mk

Keywords: Demand of schooling, Wage Expectations, Higher Education

Abstract. The aim of this paper is to assess the wage expectations of Macedonian students, and main factors that shape their expectations. Previous research elsewhere has shown that wage expectation is a major determinant that influences' schooling decision (Williams and Gordon, 1981; Betts, 1996; Wolter and Zbinden, 2001). Given that the main pathway to developing human capital of an individual is schooling, learning about the factors that affect individual's decision whether to acquire more education can contribute towards better educational policy in the country. We employ similar empirical approach as the one used by Brunello et al. (2001, 2004). We use available information to regress: i) expected future earnings right after graduation from university and ii) expected future earnings 10 after graduation from university, on a set of variables which includes: characteristics of the individual, socio-economic background, field of study, year of enrolment (junior or senior students), academic performance, sources of information for future earnings and country of future employment, perceived employability and costs of studies. Our findings show that expected university earnings are significantly correlated with father's education, year of study, sources of information on wages in the labour market, gender, ethnicity, regular job during studies, perceived employability, field of study and country of future employment. In other words, Macedonian students form their wage expectations in a similar vein as their European counterparts. The major contribution of this study is providing a pioneering work on wage expectations of Macedonian students, as well as providing a comparative analysis of the wage expectations of students in Macedonia and their peer colleagues from the EU Member States.

1. Introduction

After finishing upper secondary education, every individual is facing a major decision: whether to continue his/her education or to enter the labour market. The recent changes in the educational policy in Macedonia have brought a large increase in the number of pupils that enroll into

universities after graduating from secondary schools. The most important policy changes, as well as other factors leading to high university enrolments are the following:

- Starting from school year 2008/2009, the upper secondary education is obligatory, with financial penalties for parents whose children are not enrolled or are not attending regularly secondary schools;
- There has been a great expansion of the capacity of the tertiary education institutions, increased subsidies to tuition fees, as well as geographical expansion through dispersed studies across the country;
- High unemployment in the country, coupled with relatively high payoffs to higher education (i.e. unemployment rates decrease and wages increase with the level of education).

These factors have contributed to large increase in the university enrollments, from 64% of pupils in the respective age group in 2007 to 95% in 2011 [1]. Students are believed to make rational choice by investing in their education, while expecting higher future incomes.

Benefits from getting a university degree in labor economics are measured through the returns to education: wage returns, as well as the returns in terms of the probability for getting a job. According to [2] in Macedonia, there are relatively high wage returns to education: individuals with completed 4-year secondary school have, on average, 37% higher wages than those with completed only primary education, while getting a university degree increases wages by 106% compared to those with primary education. Similarly, the employment probability increases with the education, such that workers with completed tertiary education in 2011 had 2.5 times higher employment rates than individuals with completed primary education. Hence, there are large incentives for young individuals to demand more education. However, there is no study in Macedonia so far about the factors driving the wage expectations of students and hence their demand for education. Number of questions arise. For instance, to which extent are students realistic for the market value of their labour after the graduation from university? Do they expect gender wage gap in the earnings? Which characteristics of students and their social environment influence the expected earnings?

While the literature on returns to education is very broad, few studies have attempted to answer these questions. Most of the studies for wage expectations are related to US and European experience, with no similar studies either for the transition countries or the Western Balkan countries. In this respect, the aim of this paper is to provide first insight into the wage expectations of Macedonian students after graduation from university and to fill in the gap in the empirical literature.

This paper is organized as follows. In Section 2 a brief review of the relevant literature is presented, whereas Section 3 discusses data and used methodology. Section 4 presents and discusses results and Section 5 concludes.

2. Literature review

Decision on whether a person will choose to continue his/her education depends on perceived costs and benefits from it [3]. However, there are only few studies that try to explain how expectations are formed and what are the major determinants that affect expectations. Across the scarce studies in this area, the following factors are commonly found to affect student's expectations about future wages: the socioeconomic background of the student, gender, field of study, academic performance, age of a student and sources of information ([4, 5, 6, 7]). We proceed by examining each of these factors separately.

Socioeconomic background

Most studies focus on the parents' education and income as main socioeconomic factor that influences wage expectations of students [7, 8, 9]. Parental educational background is thought to influence student's expectations on at least two levels: (i) information on wages from educated parents are of better quality, (ii) students who have well educated parents can rely on their parents' personal networks for finding a job after graduation, and hence have higher wage (and job)

expectations. [9] using data from seven Irish universities found out that parental education has significant and positive effect on short-run and long run earnings expectations. This however is not in line with the results of works of [10,11]. In particular, [10] conducting a survey among 1,000 undergraduates from the University of California found that there is no strong effect between parental education and student's wage estimation. This is confirmed by [4,6]. [4] used different approach; imagining different scenarios students were asked to predict their own future wages, as well as the wages of average person with similar characteristics. In this study, as well as in the study of [6] parental education as variable proved to be insignificant. Opposite to all previous studies, [11] found negative effect of parental education on earnings expectations in Russia.

Different results appear when researchers examine separately the influence of the mother's and father's education on the students wage expectations. [5] in the study based on a survey conducted in 50 universities across 10 European countries find that having a mother with a university degree leads to a 3.3% increase in expected wage right after graduation, and almost 4%, 10 years after entering labor market. In the same study father's education was found that is not statistically significant. This is confirmed by other study of [12].

The are consistent findings about the influence of parental income on students wage expectations: wage expectations are higher when parental income is higher [7, 10, 13, 14]. [14, 7] agree that students from high-income families expect higher salaries in order to maintain high living standard and their expectations are based on the income of the people around them. [7] states that this result may be factor in explaining increased participation in extended education for students from wealthy backgrounds.

Gender

Researchers in many academic disciplines recognize the existence of wage gap between males and females [15, 16, 17] which is thought to affect wage expectations for different genders: knowing the actual gender pay gap, students expect lower earnings for females. According to [17] women are still paid between 20% and 40% less than man despite the introduction of equal opportunity legislations. He argues that part of the existence of gender wage gap is explained by gender differences in educational and career choices, as well as the gender differences in expectations, but there is still a large part that is left unexplained. [15] examining gender wage gap found that woman plan shorter terms of employment and because of that less capital returns.

According to several studies, women do expect to earn less than man [4, 7, 16, 18, 19, 20] Examining whether earning expectations of students from Florida International University are realistic, [18] found that female students expect and earn significantly less than male students. This is confirmed by [7] when using Dutch panel data. These authors examined the accuracy of student's prediction of their future salaries and found that female students expect to earn 5% less than males, which is very close to the reality in which they earn 6% less. [16,19] agree that even though females expect lower earnings than males, they prove to be more realistic in their expectations.

Age

Most of the reviewed studies have examined the influence of students' age over their wage expectations [5, 6, 10, 12, 19, 21]. [21] found that earnings expectations are quite similar between junior and senior students. Opposite to this, several authors [5, 6, 10, 12,19, 22] agree that senior students expect lower wages than junior students. [12] provides three possible explanations for such a result: (i) formations of wage expectations improve as student approach graduation and they become more realistic for their future earnings, (ii) senior students take questionnaire more seriously and/or (iii) students are taking into consideration future positive inflation and productivity growth.

Field of study

[7] found that students in law, economics, health and technical studies expect to earn more than their colleagues from social sciences, while students in languages expect the same wage as students in social studies. [11] found that law students expect to earn significantly more (20% more) than

their colleagues from other fields of study. On the contrary, [5] found that students in Science and Engineering have higher expectations than students in Humanities, which is confirmed by the study of [22]. [14] examining the students' wage expectations using UK survey data explains that students in Science have unrealistic expectations because their chosen subject is traditionally challenging and therefore they expect to be rewarded.

Academic performance

The role of ability is in the center of discussion in the schooling behaviour literature, but very few studies examined the relationship between ability and wage expectations. [23] points out that young people use their ability to form their expectations, and school choice depends on it. Several authors (

[6, 12, 14, 18] include academic performance variable in order to test if there exists a correlation between students' wage expectations and their performance in college. Academic performance is measured through students' perception of their ability compared to the other students. The results are consistent: students who perceived themselves as high performers have higher expected university earnings.

Sources of information

The source of information about wage prevalent in the labour market can also affect wage expectations. Adding this variable into regression, [5,6] found opposite results. The former study found that when information is personal or collected from the daily and weekly press then this variable is significant and positively affects students wage expectations. On the contrary, the latter study finds that students with no specific information about salaries have significantly higher expectations than the rest.

Other findings

Several authors examined other influences over students' wage expectations. [24] comparing students' expectations in England and Czech Republic found that students who have higher costs for their studies, in order to compensate those, tend to have higher wage expectations. [14, 24] examined the influence of ethnicity over students wage expectations. Both authors agree that students from minority background expect higher starting salaries, and tend to be more optimistic about their future earning potential. [26] suggest that private schools attract students with higher quality and therefore these students expect higher wages than their colleagues.

To sum up, when deciding on the amount of education to "consume" individuals compare different options and chose the one with highest return. Therefore, expectations for the future earnings are major determinant that have influence on schooling decision. The review of the relevant literature revealed the complexity of expectations' formation and that expectations are mostly influenced by the students' personal characteristics (age, gender), their socioeconomic background (education and income of their parents), field of study, academic performance, sources of information on wages, etc.

3. Methodology and Data

Several authors using different approaches have tried to examine which determinants have influence on forming students' wage expectations [5, 6, 7, 12, 24]. Our study is based on the methodology used in the work of [5], which originally is based on method for estimation of private return on education known as Mincer's method. [27] was one of the first authors who applied the concept of human capital for empirical estimation of the returns on education. In the Mincerian equation, dependent variable are earnings of an individual, which are presented in logarithmic form. [5] estimated linear regression in which the dependent variable is a logarithm of students' expected earnings which is regressed on a set of independent variables.

Data used in our study on wage expectations of Macedonian students were collected through a survey that was conducted in 11 university faculties belonging to 3 (1 state and 2 private) universities in Macedonia. The share of these three universities in the total enrollments in the universities across Macedonia is 80%. The questionnaire used in the work of [5, 12] was adapted

for the purpose of our study, taking into consideration the specific country context and our research questions. We asked students of their wage expectations under two different scenarios: i) expected monthly net earnings right after university graduation, and ii) expected monthly net earnings 10 years after graduation. In order to collect relevant answers about expected wage after graduation, students were choosing from several intervals in which they thought that their future monthly net earnings belong. We used interval amounts that are commonly used by State Statistical Office. The ordered variable was then transformed into continuous variable by calculating the mean from each interval. We then apply linear regression, which is defined as:

$$\ln W_i = \beta_i X_i + \varepsilon_i \quad (1)$$

where:

W_i =expected net wage of individual I; β_i =vector of parameters to be estimated; X_i =vector of parameters, assumed that have influence on wage expectations and ε_i =error, assumed to be well-behaved. Table 1 examines variables used in our study, X_i

Table 1: Description of variables

	Wage expectation with university degree	Continuous variable
	Wage expectation with university degree 10 years after graduation	Continuous variable
	Year of study	Dummy 1=juniors; 0=seniors
	Type of school	Dummy 1=private; 0=state
Field of study	Business and Economy	Dummy 1=yes; 0=otherwise
	Engineering	Dummy 1=yes; 0=otherwise
	Mathematics	Dummy 1=yes; 0=otherwise
	Medicine	Dummy 1=yes; 0=otherwise
	Father holding Univesrity degree or Master/PhD	Dummy 1=yes; 0=otherwise
	Mother holding Univesrity degree or Master/PhD	Dummy 1=yes; 0=otherwise
	Same field as father	Dummy 1=yes; 0=no
	Same field as mother	Dummy 1=yes; 0=no
	Repeaters	Dummy 1=yes; 0=no
	Academic performance	Ordered variable on a scale 1 to 5 1=very good;2=good;3=average;4=poor;5=very poor
	Employment in family business	Dummy 1=yes; 0=no/my family doesn't have household business
	Employability	Ordered variable on a scale 1 to 5 1=very good;2=good;3=average;4=poor;5=very poor
	Expected country of employment	Dummy 1=Macedonia; 0=other country
	Regular job during studies	Dummy 1=yes; 0=no
Information's about wages	W1	Dummy 1=career center; 0=otherwise
	W2	Dummy 1=daily/weekly press 0=otherwise
	W3	Dummy 1=personal communications 0=otherwise
	W4	Dummy 1=never; 0=otherwise
	Costs	Continuous variable
	Gender	Dummy 1=females; 0=males
	Ethnicity	Dummy 1=Macedonian; 0=other

The questionnaire (in Macedonian language) was distributed among Macedonian undergraduates in spring semester of the academic year 2012/2013. Different fields of study were selected randomly and students were asked to fill in the questionnaire during the first minutes of a lecture. This method delivered 100% response rate and 496 questionnaires were returned.

Tables 2 and 3 present in detail descriptive statistics for the sample. Here we present some of those statistics. Average age of the students in the sample is around 21 years. At the time of the survey, 59% of the students were in their first year of study, while others in their last year of study. Students in Macedonia expect their average starting wage after graduation to be 24,085 denars, and 10 years after graduation 36,150 denars. Slightly higher share of the respondents are females: 56% compared to 44 % males. Majority of the students (85%) respondents reported Macedonian ethnicity. Males after graduation from university on average expect to earn 15% higher wages than females and 17% more after 10 years in labour market. Less than half (43%) of the students are studying in private universities. About 43% of respondents belong to households where fathers have university degree or master/PhD, and 44% of respondents belong to households where mothers have university degree or master/PhD. Small portion of students is enrolled in the same field of study as their parents, 19 % are in the same field of study as their fathers, while 13 % are in the same field of study as their mothers. Almost 1/3 of respondents need additional years of study to complete their university education.

Table 2: Descriptive statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
year of study	496	0	1	0.59	0.492
type of school	496	0	1	0.43	0.495
Field of study					
Business	496	0	1	0.20	0.399
Economy	496	0	1	0.09	0.285
Computer Science and Information technology	496	0	1	0.05	0.210
Mathematics	496	0	1	0.07	0.249
Civil Engineering	496	0	1	0.16	0.364
Architecture and Design	496	0	1	0.19	0.389
Medicine	496	0	1	0.07	0.253
Electrical Engineering	496	0	1	0.02	0.147
Agriculture and food	496	0	1	0.17	0.374
Father's education	496	0	7	5.02	1.236
no formal degree	496	0	1	0.00	0.045
apprenticeship training	496	0	1	0.01	0.090
primary education	496	0	1	0.02	0.126
secondary education	496	0	1	0.36	0.482
higher education	496	0	1	0.17	0.375
university degree	496	0	1	0.34	0.474
Master/PhD	496	0	1	0.09	0.282
Don't know	496	0	1	0.01	0.109
Father holding University degree or Master/PhD	496	0	1	0.43	0.495
Mother's education	496	0	7	4.96	1.306
no formal degree	496	0	1	0.01	0.078
apprenticeship training	496	0	1	0.00	0.063
primary education	496	0	1	0.03	0.182
secondary education	496	0	1	0.35	0.477
higher education	496	0	1	0.15	0.359
university degree	496	0	1	0.37	0.484
Master/PhD	496	0	1	0.06	0.246
Don't know	496	0	1	0.02	0.134

Mother holding University degree or Master/PhD	496	0	1	0.44	0.497
same field as father	496	0	1	0.19	0.394
same field mother	496	0	1	0.13	0.338
repeaters	496	0	1	0.33	0.471
Academic performance	493	1	5	2.41	1.102
Wages information					
WI1	491	0	1	0.07	0.258
WI2	491	0	1	0.12	0.328
WI3	491	0	1	0.67	0.471
WI4	491	0	1	0.14	0.344
University monthly net wage	496	5000	45,000	24,085.69	10,865.673
high school monthly net wage	489	0	60,000	11,818.00	6697,477
Graduation wage after 10 years%	491	0	400	49.35	43.556
high school wage after 10 y%	490	0	322	19.76	28.263
opposite gender	491	5	160	100.10	17.794
opposite gender 10	491	50	150	112.51	22.334
other ethnicity	491	50	150	101.96	15.234
other ethnicity 10	491	10	150	108.53	21.307
family business	490	0	1	0.31	0.462
where	488	0	1	0.66	0.476
employability	491	1	5	3.55	0.992
regular job	491	0	1	0.09	0.292
Working hours	34	4	50	19.82	14.147
costs	488	6500	360,000	92,133.48	64,860.180
year of birth	491	1968	1995	1991.73	2.285
gender	490	0	1	0.56	0.497
ethnicity	484	0	1	0.85	0.360

Table 3: Descriptive statistics by gender

Variable	%	%
	male	female
Field of study		
Business	8.6	11.2
Economy	1.8	6.9
IT	4.1	0.6
Mathematics	1.6	5.1
Civil engineering	9.0	6.9
Architecture	7.8	10.2
Medicine	1.8	5.1
Electrical engineering	1.4	0.8
Agriculture and food	8.2	8.8
Parent's education		
Father		
don't know	0.4	0.8
no formal degree	0.2	0.0
apprenticeship training	0.8	0.0
primary education	0.4	1.2
secondary education	15.5	21
higher education	8.0	9.2

university degree	13.3		20.4
Master/PhD	5.7		3.1
Mother			
don't know	0.8		1.0
no formal degree	0.2		0.4
apprenticeship training	0.2		0.2
primary education	1.6		1.8
secondary education	14.7		20.2
higher education	8.0		7.1
university degree	16.3		20.8
Master/PhD	2.4		4.1
Same education as parent			
same field as father	9.6		9.8
same field as mother	3.9		9.4
Year of study			
junior	27.1		31.8
senior	17.1		23.9
Relative Academic performance			
very poor	9.7		16.8
poor	10.5		14.2
average	15.7		16.4
good	6.8		7.2
very good	1.2		1.4
repeaters	16.3		16.7
regular job during studies	31		15
Perceived Employability			
very poor	1.8		1.6
poor	5.7		3.9
average	11.8		19.6
good	16.3		23.1
very good	8.6		7.6
Country of employment			
Macedonia	23.8		37.2
family business	16		14
Other country	16		18.5
Ethnicity			
Macedonian	34.9		49.8
other	9.1		6.2
Observations	44.3 %		55.7 %

4. Results

The results from the estimated equation (1) are presented in Table 4. Data are presented for the dependent variable: i) wage expectations after graduation from university (column 1) and ii) wage expectations 10 years after graduation (column 2). We proceed by examining factors that significantly influence wage expectations of Macedonian pupils.

The coefficient of determination for the first equation is about 22%, meaning that 22% of the variability in the wage expectations of pupils after graduation is explained by the independent variables/regressors. The coefficient of determination for the second equation is about 26%, meaning that 26% of the variability in the wage expectations of pupils 10 after graduation is explained by the independent variables/regressors. Coefficientst are jointly significant and

coefficients have the expected signs. As Table 4 shows, following variables are found to have a significant influence on the wage expectations of pupils: year of study (juniors vs. seniors), field of study, father's education, sources of information, country of employment, perceived employability, holding a regular job during studies, gender and ethnicity.

Table 4: Expected graduation and high school wage and expected wage gain 10 years after labour market entry

	University wage	University wage 10 years after graduation
	β	β
Year of study (juniors=1)	0.149***	0.095**
Type of school (private =1)	0.014	-0.004
Field of study: reference category: Engineering		
Mathematics	0.013	-0.117
Medicine	-0.247***	-0.239***
Business and economy	-0.005	0.020
Father holding University degree or Master/PhD	0.102**	0.156***
Mother holding University degree or Master/PhD	0.047	0.026
Same field as father	-0.043	-0.044
Same field mother	0.060	0.008
Repeaters	0.014	0.005
Academic performance	-0.003	-0.007
Wages information (reference category=never)		
WI1 (career center=1)	0.251***	0.312***
WI2 (daily/weekly press=1)	0.151**	0.223***
WI3 (personal communication=1)	0.011	0.057
Family business	-0.008	-0.010
Country of employment	-0.170***	-0.219***
Employability	0.082***	0.131***
Regular job	0.137*	0.127**
Costs	0.000	0.000
Gender (female=1)	-0.103***	-0.201***
Ethnicity (Macedonian=1)	-0.106**	-0.052

*,** and *** indicate significance at the 10, 5 and 1% level, respectively

In Macedonia, students who belong to households where the father has University degree, or Master/PhD, expect to earn 10% more than their peers at the labour market entry and 15.6% more after 10 years. In the EU countries having a father with University degree is not statistically significant (for instance, see [5]). Our study shows that in Macedonia there is no effect of the mother's education on the wage expectation of students. Furthermore, in Macedonia as in EU, there is not statistically significant correlation between expected earnings and same field studied as parents.

We find that female students in Macedonia, as in most European countries, expect to earn less than their male colleagues, 10% less if they hold university degree. This gap is increasing to 20% after 10 years on the job with university degree.

Similar to the findings of several authors from Europe [5, 6, 22] junior students expect to earn more than senior students. In Macedonia juniors expect to earn 14% more than senior students at the

labour market entry, and 9.5 % more after 10 years. Section 3 provides several possible explanations for the greater optimism of the junior students.

When examining the relation between students wage expectations and chosen field of study, we found that students from Medicine at the entry of the labour market expect to earn 25% less than Engineering students. After 10 years on the job, this percentage slightly decreases to 24%. The coefficients for the other fields of study are insignificant. This result is in line with the work of [5].

Depending on how students are informed about wages in their field of study, their wage expectations might vary. In Macedonia, students who have gathered information about future earnings in the University career centres expect to earn 25% more at the beginning of their careers than students who don't have information about future wages. Students who informed themselves from daily or weekly press expect to earn 15% more than students who don't have information about future wages. These results are opposite of the results from the study of [6].

Students from Macedonian ethnicity expect to have 10% lower wages than their colleagues from other ethnicities at the entry of the labour market, which is in line with the work of [14]. Lower expectations of ethnic Macedonians can be related to the policy of equal representation of ethnic minorities (under the Ohrid Framework Agreement), as well as the lower relative supply of workers from ethnic minorities who hold university degree. Coefficients on the ethnicity after 10 years on the job are not statistically significant. Although [26] suggest that students from private universities expect more from their future earning, we have not found correlation between type of school (private vs. state) and students' wage expectations

Holding a regular job while studying can influence students wage expectations in at least two ways: (i) students who work during their studies have insider information's about wages and labour market and (ii) they take into consideration their working experience and therefore expect higher wages. In Macedonia, students who hold a regular job during their studies expect to earn 13.7% more than students who don't work.

Because of the evidenced brain drain in Macedonia, we asked students about country of their expected employment. Students who expect to work in Macedonia, have 17% and 22% lower wage expectations than students who expect to work abroad at the entry of labour market and 10 years after graduation, respectively.

Opposite to the results from the work of [24] we have not found correlations between costs of studies and students wage expectations.

5. Conclusion

The aim of this paper was to fill in the gap in the empirical literature on the factors influencing wage expectations of Macedonian students. In addition, we put the results into comparative perspectives with the EU students. Our key finding is that expected university wages are significantly correlated with father's education, year of study, sources of information on wages in the labour market, gender, ethnicity, regular job during studies, perceived employability, field of study and country of future employment. In other words, Macedonian students form their wage expectations in a similar vein as their European counterparts.

However we need to be cautious when we apply these results to entire students' population as we faced non-balanced sample of Universities. Next logic step to extend this research should be to work with a representative sample of Macedonian students.

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