



COMPARISON OF THE RESULTS OF TWO RESEARCH WORKS ON E-LEARNING WITH A SPECIAL EMPHASIS ON THE CHANGE OF ECONOMIC CONDITIONS AFTER LITHUANIA'S ACCESSION TO THE EU

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ABSTRACT. Changing conditions caused by economic, social and technological factors force higher education institutions to maximize their investments in instructional technology equipment, facilities and training in order to provide new learning experiences for students.

This paper compares the results of two research works carried out by the authors. The paper focuses on the change of economic conditions after Lithuania's accession to the EU. The first research was carried out in 2003—before the EU accession. The research was based on a questionnaire. The second research was completed in 2006—after the EU accession. The results of both research works were compared on the basis of general indices of the economic level. The main purpose of the comparison was to show the differences of students' opinion and the development of e-learning in the Civil Engineering Faculty of Vilnius Gediminas Technical University (Lithuania).

1. INTRODUCTION

Electronic learning or e-learning is a general term which refers to a type of education when the teacher and the student are separated by space or time and the gap between them is bridged through the use of online technology [1].

E-learning is used in numerous contexts interchangeably. In companies, it refers to strategies that use the company network to deliver training courses to employees. In universities offering distance education, such as the Open University in UK or the Penn State World Campus in USA, e-learning is defined as a planned teaching/learning experience that uses a wide spectrum of technologies, mainly Internet, to reach learners at a distance [1].

In virtual learning environments, the motivation to learn is based on successful communication between teachers and students, as well as professional implementation of methodical/didactic methods. This can be achieved through a good atmosphere, interest and

esteem, along with communication and a good relationship—both of which are essential factors to succeeding in virtual learning [2].

The first distance-learning programme was launched in September of 1999 in the Department of Construction Economics and Property Management of the Faculty of Civil Engineering of VGTU. It was one of the first Master Degree programmes in Central and Eastern Europe. Currently, three study programmes are available. The total number of students is 215. All programme materials are available as printouts and are enhanced, where appropriate, to take advantage of modern teaching techniques and delivery mechanisms. In particular, the following media are used in specific modules: electronic textbooks, videos, computer software, computer learning systems, computer conferencing, computer networks, ‘face-to-face’ contact. The choice of media is often relatively easy because, in many cases, local constraints, accessibility issues and the cost virtually dictate the media through which learners will have to work. Accessibility is vitally important to any learners who have to use self-instructional materials [3].

2. THE DESCRIPTION OF CHANGED ECONOMIC CONDITIONS IN LITHUANIA

This chapter describes the economic and social conditions in Lithuania before and after the EU accession.

The impact of globalisation, new technology and new forms of work organization are common issues for all countries in the EU. The nature of the modern labour market displays increased complexity and diversity linked to issues like:

- Migration;
- Regional marginalization;
- Increased participation rates for women;
- Changing nature of work (due to technological advances and improvement);
- Implications of legislation and human relations practice [4].

Nowadays, the Construction Sector in the EU is one of the most relevant forces of the European economy—it represents 10% of the total EU GDP and 7% of the total employment. Nevertheless, we can define this sector as a very unstructured activity with a wide range of interactions in the value chain. In fact, we can say it’s a hyper-sector that has been demonstrating over previous decades, to be market oriented and not too much innovative [5].

The indicators describing economic conditions are: Gross Domestic Product (GDP), the inflation rate, the unemployment rate, employed population by type of economic activity, average monthly gross earnings in the whole economy (LTL), and population by educational attainment.

Average monthly gross earnings are defined as wages and salaries before taxes, as well as statutory social insurance contributions payable by the employee. It includes wages and salaries for work done or time worked, fringe benefits, extra payments, regular and irregular bonuses, payments for time not worked (vacation, idle-time which is not an employee’s fault, other statutory days not worked). Severance pays and compensations, fines for postponed earnings, dividends, social benefits, meal vouchers, other compensations (for dwelling rent, public utilities, monthly transportation tickets, etc.), non-repayable loans for construction of housing, sick leave allowances, and other payments paid by the State Social Security Fund are excluded [6].

Table 1 shows the main economic and social indicators of Lithuania.

As illustrated in Table 1, the average number of population and the unemployment rate decreased in recent years. The main reason is high level of emigration, especially after the EU accession.

Table 1. The main indicators of economic and social development (annual) in Lithuania [6]

Indicators	2003	2004	2005	2006	2007
Annual average population, thousands	3,454.2	3,435.6	3,414.3	3,394.1	3,366.2
Unemployment rate, by labour force survey data, %	12.4	11.4	8.3	5.9	4.3
Inflation (December compared to December of previous year), %	-1.3	2.9	3.0	4.5	7.3
Average monthly gross earnings of employees in the whole economy, LTL	1,072.6	1,149.3	1,276.2	1,500.2	2,052.0
Gross domestic product at current prices, LTL million	56,804	62,587	71,200	81,973.6	77,939

Table 2. Employment in Lithuania by type of activity [6, 7]

Type of activity	2003	2004	2005	2006	2007
Total labour force, thousands	2,319.9	1,620.6	1,606.8	1,588.3	1,534.2
Agriculture, hunting, forestry and fishing, %	17.9	15.8	14.0	12.4	10.4
Industrial and construction sectors, %	28.1	28.2	29.1	29.7	30.7
Service and commercial sectors, %	54.0	56.0	56.9	57.9	58.9

The current rate of inflation is very high, and it prevented Lithuania from joining the euro area in 2006.

Gross domestic product has increased due to the influence of the average monthly gross earnings of employees.

The employment of Lithuanian population by type of activity is shown in Table 2.

Table 2 shows that, in general, the total amount of labour force has decreased, and the distribution of labour force by sectors is different. The increase is noted in industrial and construction sectors. The situation reflects the main trends of the EU economy.

3. ANALYSIS OF THE QUESTIONNAIRE-BASED SURVEY RESULTS

Two surveys have been conducted to gain insight into a number of issues related to the study process (first and foremost the student motivation, efficiency of advertising, issues related to the quality of study materials, reactions of social environment, etc.).

The first research was carried out in 2003, before the EU accession. The questionnaire was answered by 125 respondents. The results of the first research were published in scientific journals and the proceedings [3, 8, 9, 10].

The second research was concluded in 2006, after the EU accession. The questionnaire was answered by 86 respondents.

Both research works have two main differences which influenced the results of the responses: use of new questioning technology and changed economic conditions.

Our Department currently explores implementation of the virtual learning space MOODLE. The questionnaire-based results are obtained by using MOODLE and additional scripts programmed and applied in the MOODLE learning space. The results of the research are available in the VGTU website dedicated to distance learning (see Figure 1) [11].

5. Kokie Jūsų studijų tikslai? (Pažymėkite visus tinkamus variantus).

Response	Average	Total
Galimybės gauti gerą darbą.	40.2%	35
Gauti naujos specialybės diplomą.	69.0%	60
Įgauti naujų žinių.	77.0%	67
Pagerinti turimus darbo įgūdžius.	37.9%	33
Pagerinti žinias.	51.7%	45
Other: gauti magistrantūros diplomą	1.1%	1
Other: naudingai praleisti laiką	1.1%	1
Other: sudėti galvoje objektyvų vaizdą apie statybą Lietuvoje	1.1%	1

6. Koks nuotolinis bendravimo būdas su dėstytojais Jums priimtinesnis ir patogesnis? (Pažymėkite visus tinkamus variantus).

Response	Average	Total
Elektroninis paštas.	94.3%	82
Faksas.	6.9%	6
Numatyti kontaktiniai susitikimai.	60.9%	53
Telefonas.	48.3%	42
Vaizdo konferencija.	14.9%	13

Fig 1. The research of distance learning: a fragment of the results [11]

Figure 1 shows a fragment of the questionnaire results: two questions answered by the respondents. Question 5 provides information about the aims of studies. The respondents were allowed to select a few options for the answer. 77.0% of respondents specified new knowledge as their aim. Question 6 provides information about the most convenient way of distance communication with teachers. The respondents were allowed to select a few options for the answer. E-mail communication was the most popular choice (94.3%), followed by face-to-face contacts (60.9 %) and phone calls (48.3 %).

3.1 THE COMPARISON OF THE RESULTS OF BOTH RESEARCH WORKS

The comparison of the results of both research works is based on general indices of the economic level, which are described in Chapter 2.

Figure 2 compares the distribution of respondents by gender in both research works.

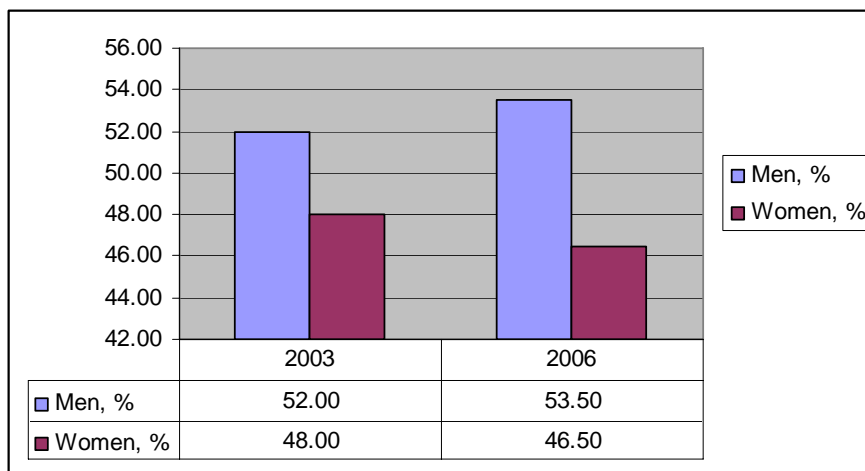


Fig 2. Distribution of respondents: comparison by gender

The age of respondents ranged between 21 and 53 years.

As illustrated by Figure 3, the students enrolled in the distance-learning course are people of different age groups (6 groups in total).

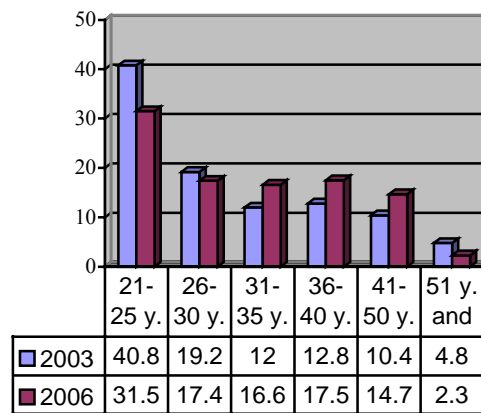


Fig 3. Distribution of respondents: comparison by age groups, %

In order to compare the distribution of students by age, the authors have divided all respondents to two comparable groups. The first group includes young students up to 30 years (group A). The second group (B) includes older students aged between 30 and 53 years.

Table 3 compares the distribution of respondents between the two age groups (A and B).

Table 3. Compared distribution of respondents between two age groups, %

Year	Age group	
	A	B
2003	60	48.9
2006	40	51.1

As illustrated by Table 3, the main difference between both research works is big change in the number of respondents falling within Group A (young people)—a decrease of 20%.

It is related to the main economic indicators (see Table 1). The annual average population decreased in 2006—due to emigration and the demographic conditions.

Table 3 also shows that the number of respondents falling within Group B increased. It is brought about by the need of older people to adapt to the changed economic situation after Lithuania's accession to the EU, due to the distribution of labour force by type of activities (see Table 2).

Figure 4 compares the distribution of respondents by the place of residence.

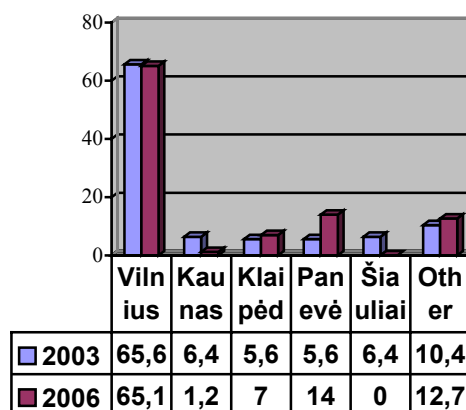


Fig 4. Distribution of respondents: comparison by the place of residence, %

As illustrated by Figure 4, most of the students come from Vilnius. We believe that this situation is influenced by economic and social factors and high concentration of jobs in the city of Vilnius.

Figure 5 shows the distribution of respondents by type of employment.

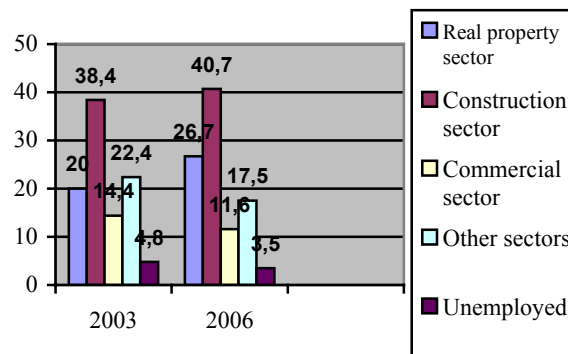
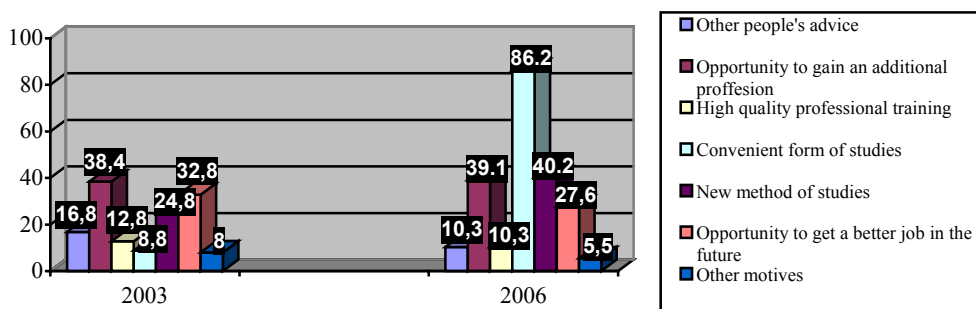


Fig 5. The distribution of respondents by type of employment, %

Figure 5 shows that the majority of respondents (67.4%) are employed in the sectors of construction and real property. Such situation is caused by the growth of the respective sectors, and the need of labour force to gain the qualifications in these areas. This proposition is illustrated in Figure 6.

Fig 6. Distribution of respondents: comparison by motives of studies, %

As illustrated by Figure 6, the number of respondents who selected the answer “convenient form of studies” is one of the major differences between the research works. The increase of 9.8 times is noted. It shows that the quality of the distance learning has also



improved (more advanced technologies, introduction of the synchronic learning). Students had the opportunity to choose more than one motive of studies.

We have reached the part dealing with very important economic problems.

Just like education establishments of other countries, Vilnius Gediminas Technical University takes tuition fees for the distance learning courses. Therefore, during the research, students were asked to specify the source of financing, and to evaluate the size of the tuition fee and the cost of studies.

The distribution of respondents by the source of financing is compared in Figure 7.

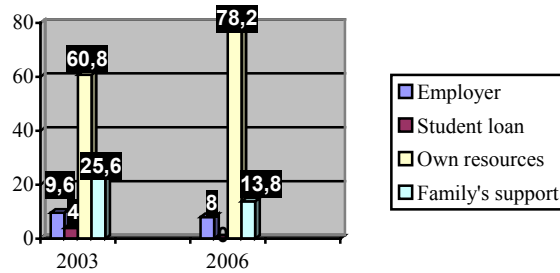


Fig 7. Distribution of respondents: comparison by the source of financing, %

Figure 7 shows that the majority of students have jobs and pay for their studies themselves. Family support is the second popular choice, whereas employers paid for studies of rather few students. The first research revealed that some students took student loans, but this form of financing has lost its popularity today, because too little money can be granted.

Figure 8 compares respondents' opinion about the level of tuition fees.

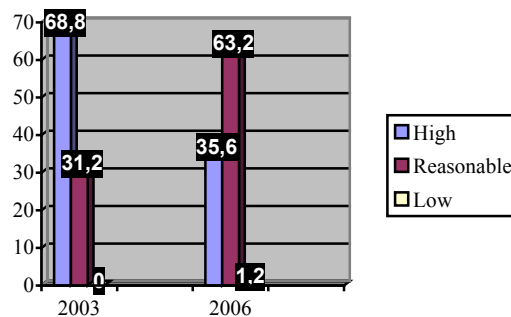


Fig 8. The comparison of respondents' opinion about the level of tuition fees, %

Figure 9 compares respondents' opinion about the cost of studies.

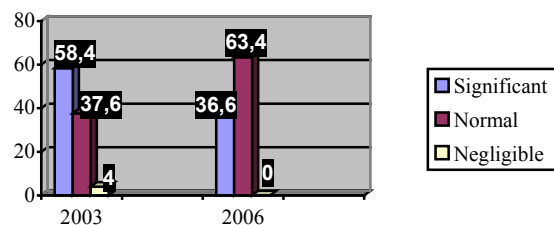


Fig 9. The comparison of respondents' opinion about the cost of studies, %

The economic conditions in Lithuania have changed during the period between both research works (see Table 1). The tuition fees haven't changed during the same period.

Figure 8 and Figure 9 show that the new opinion of students changed compared to their earlier opinion in 2003. The current tuition fee of distance learning studies satisfies students.

4. CONCLUSIONS

1. The main economic and social development indicators show positive changes in the economic situation of Lithuania.
2. Serious labour force redistribution by type of activity occurred after the EU accession. Growth was noted in industrial and construction sectors. The situation reflects the main trends of the EU economy.

3. The comparison of the results of two research works, completed in 2003 (before the EU accession) and in 2006 (after the EU accession) respectively, reveals the following trends:

a) Obvious increase of respondents older than 30 years has been recorded. It depends on the need of older people to adapt to the changed economic situation after the EU accession. Many young people emigrate.

b) The overwhelming majority (96.5%) of respondents are employed. The majority of respondents (67.4%) are employed in the sectors of construction and real property.

c) These are the main advantages of distance learning:

- Convenient form of studies;
- New method of studies;
- An opportunity to get acquainted with new information technologies;
- Opportunity to get a better job in the future;
- High quality professional training.

The major difference between both research works according to the motives of studies is increased popularity of the option “convenient form of studies”—the increase of 9.8 times. It shows that the quality of the distance learning has improved as well.

d) The economic conditions have changed in Lithuania in the period between both research works. The tuition fees of studies haven't changed during the same period. The new opinion of students changed compared to their previous opinion in 2003. They are satisfied with the current tuition fee of distance learning studies.

5. To sum up the research results, the distance studies offered by the Department of Construction Economics and Property Management of the Civil Engineering Faculty are developing rapidly and are viewed by the students positively. The main distance learning development trends correlate with the changed economic conditions after the EU accession.

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