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IMPACT OF FORMAL AND LIFELONG LEARNING ON EMPLOYABILITY AND ECONOMIC DEVELOPMENT OF EASTERN CROATIA

UTJECAJ FORMALNOG I CJELOŽIVOTNOG OBRAZOVANJA NA ZAPOŠLJIVOST I RAZVOJ GOSPODARSTVA ISTOČNE HRVATSKE

ABSTRACT

In recent years, there has been a decrease in financing of formal education due to the changes in trends in demographic structure and slow growth of the economy, but also due to the more dynamic changes dictated by the labour market. Role of state in financing is important, but the role of other scientific and educational public and private institutions in designing the necessary models of education are also significant and it is shown that the process of establishment of education programs has to continually adapt to the market needs, mainly through stronger connection and contacts with the economy. Human resources are not fully utilized and adjusted to the needs of the economy. This paper shows average trends of education through European standards comparable with Croatian standards, which, on an annual basis, follow the achievements in line with the strategy Europe 2020, as well as certain concepts of lifelong learning, which should ultimately bring specific recommendations.

Performance recommendations, in accordance with the established goals, are focused on defining realistic competencies and skills that would improve performance of employability in the economy of eastern Croatia. The aim of the research arises from the analysis of more practical forms of education and stronger networking of educational programs with economic entities on the example of engagement of individuals in designing their own business ventures and simultaneous search for further competences in education vertical.

Key words: state, human resources, formal and lifelong learning, educational institutions, local economy.

SAŽETAK

U zadnjih nekoliko godina došlo je do smanjenja financiranja formalnog obrazovanja zbog promjena trendova u demografskoj strukturi, sporom rastu gospodarstva ali i trendova koje diktira tržište radne snage. Uloga države u financiranju i ostalih javnih i privatnih subjekata u kreiraniu potrebitih modela obrazovania je značajna, pri čemu je put obrazovanja sve prilagođeniji potrebama tržišta što bi u konačnici trebalo efikasnije doprinijeti mogućnostima razvoja gospodarstva na središnjoj i regionalnoj razini. Budući da se i u Republici Hrvatskoj rađaju tzv. z-generacije, da je sve veći broj starijih koji žele učiti glavna zadaća države, regionalnih jedinica vlasti te obrazovnih institucija bi trebala biti usmjerena na prepoznavanje i kreiranje učinkovitijih programa cjeloživotnog obrazovanja. Ljudski potencijal nije dovoljno iskorišten i prilagođen potrebama gospodarstva zbog sporosti i neprilagođenosti ka promjenama te trendovima koji se u gospodarstvu dinamičnije izmjenjuju nego što je to bilo nekad. U radu su prikazani prosječni trendovi obrazovanja kroz europska mjerila usporediva sa hrvatskim mjerilima koja na godišnjoj razini prate postignuća sukladno strategiji Europa 2020. kao i određenih koncepcija cjeloživotnog učenja, što bi u konačnici trebalo donijeti određene preporuke. Preporuke rada su usmjerene na definiranje ključnih kompetencija ljudskih potencijala u svrhu definiranja praktičnijih vidova obrazovanja koji bi imali učinkovitiji utjecaj na razvoj gospodarstva istočne Hrvatske.

Ključne riječi: država, ljudski potencijal, formalno obrazovanje, cjeloživotno obrazovanje, regionalno gospodarstvo.

1. Introduction

Many answers related to the interpretation of the dynamics of development and understanding the employability trends and education are ambiguous and have to be perceived and explored together with the policies and economies of country and EU Member States. For the purpose of understanding of the problem, it is necessary to embrace countries diversity, primarily visible in the economic indicators, but also in specific cultural, demographic and industrial differences that are present from the historic days until the present evolutionary changes, used by countries to preserve the economic sovereignty, identity and recognisability. Observation and analysis of each local environment is based primarily on the population, levels and categories of education of the population, opportunities for employability, opportunities for creating new jobs and new businesses and perspectives that each local environment seeks in order to improve the lives of the entire local population. Creating a positive environment that would ensure prosperity in terms of faster employment and better education for young people and other age groups is a challenge for every local environment, as well as for eastern Croatia.

Concepts of education and lifelong learning should have a better correlation with the needs of the labour market. That correlation allows economic entities to be more involved in the creation of future development perspectives of eastern Croatia, allowing intense and more cohesive cooperation with entities that come from the segment of education.

2. Education and lifelong learning

Education is the process where its content continuously evolves and determines the social manifestations of the categories of external and internal environment in which the most important activity a learning process, which further on influences economic, cultural, social and technical changes in line with the development and achievements of civilization. One of

the most important changes that have a very strong impact on education is the advanced development of technology and innovation.

There is no doubt that a new era of internationalization of trade and services, information society and scientific and technological process bring more and more need for continuous regulation of standards focused on redefinition of teaching and learning process.

Education, therefore, should provide basic and broad general knowledge that will be the backbone for further specialized trainings of the individuals, but also it should provide knowledge and competences, which will secure employment and financial security of the individual. Today, education includes much broader population where the most important role is taken over with the concept of lifelong learning that promotes open, mobile and innovative society.

In the previous period (2004-2012) certain changes that occurred, suggest strategic direction of education in the Republic of Croatia, in terms of primary and secondary education and higher education, as can be seen in the simple analysis in Table 1.

		v v				<u> </u>			
Voor	Students – completed	Share per year	Students –	Share per year	Students wh from instituti educ:	o graduated ons of higher ation	Studenti - završen studij	The number of	State budget expenditures (education)
primary school	primary school	% as compared to 2003	high school	ool % as compared to 2003	SPECIALIZED COLLEGE	UNIVERSITY FACULTY	% as compared to 2003	education institutions	In thousands of HRK
2003	51.211	-	47.092	-	6.489	9.243	-	-	6.806.803
2004	50.088	0%	48.548	0%	8.029	9.362	0%	102	7.244.730
2005	50.173	0%	47.698	-2%	8.458	9.732	4%	103	7.642.395
2006	49.578	-1%	46.551	-4%	8.919	10.647	14%	110	8.213.730
2007	46.814	-7%	45.823	-6%	9.929	11.040	18%	114	9.293.917
2008	46.328	-8%	44.506	-8%	10.247	15.326	64%	115	10.247.052
2009	47.578	-5%	45.331	-7%	9.905	20.251	116%	126	10.395.997
2010	47.630	-5%	44.810	-8%	9.670	22.708	143%	132	10.277.096
2011	49.586	-1%	42.669	-12%	11.153	25.335	171%	133	10.483.615
2012	47.959	-4%	43.248	-11%	11.557	25.407	171%	134	10.520.709

Table 1: The structure of education in the Republic of Croatia from 2004 to 2012

Source: The author's creation according to official data of the Statistical Office. available at: http://www.dzs.hr/Hrv_Eng/ljetopis/2011/SLJH2011.pdf (Accessed 12 Mar 2015)

Table 1 shows that there are significant differences between the trends in the primary and secondary education, when compared with higher education. With the introduction of the Bologna process, statistics in the field of higher education was improved, specifically increased number of graduates and institutions that offer higher education. Proportion of educated individuals has increased by 50% - 180%, which indicated that the strategic framework of education offered by Bologna process is accepted.

Due to the low fiscal budgetary capacity, state funding was not significantly increased. It can be concluded that the number of universities in the Republic of Croatia has increased significantly, but this can also be considered as a result of certain political and economic strategic activities.

On the other hand, analysis of education, scope of employment and the volume of investment observed by counties show a different interpretation of numbers. Specifically, number of students with a certain level of education, number of employees in all businesses in correlation of actual financial investment by the state, allocated to the segment of the development of education, in accordance with the geographical origin.

Lifelong learning refers to all learning activity undertaken throughout life to improve knowledge, skills and competences within individuals personal, civil, social or professional activity. It includes learning at all stages of life (from early childhood to old age) and in it can be: formal, non-formal and informal (Agency for Vocational and Adult Education, 2015).

The concept of lifelong learning is often replaced with the term lifelong education, but it is important to point out that the two terms are not synonymous (Marcetić, Krstanović, Uzelac, 2010:2). Education includes only organized learning processes, and broader concept that includes unintentional, unorganized and spontaneous knowledge gained throughout life.

Lifelong learning is a basic requirement of dealing with contemporary postmodern world, extending the concept of education of youth and adults to formal and informal adult education, including empirical learning of young people and adults.

Lifelong learning in the modern world is becoming the key of increased competitiveness in the labour market, long-term employability and higher levels of economic benefits. Changes in education and upbringing of youth cannot meet the different developmental needs, because they cannot be accurately predicted. Therefore, "half-life" of different types of knowledge is becoming shorter, i.e. half-life of knowledge is the number of years for which 50% of knowledge is obsolete (Buljubašić-Kuzmanovic, 2009: 53). Today is already considerably shorter than working life and especially of life span, and still is being shortened (Pastuović, 1999: 38). This resulted with the idea of lifelong learning in order to prolong the life span of knowledge.

Below *Table No. 2* shows the percentage of people involved in lifelong learning process in Croatia compared to the EU countries.

L	Ajelong learning, is in parallel with the EO 27						
		Unit	2010.	2011.	2012.		
	EU 27	%	9.1	8.9	9.0		
	Hrvatska	%	2.2	2.3	2.4		

Table 2: Lifelong learning, is in parallel with the EU 27

Source: The author's creation according to the official website of the Statistical Office of the European Communities. available at:

Data is collected from the Labour Force Survey in the European Union and can be applied to entire education or training, even if not relevant for the subjects in current or future job. The period from 2010 - 2012, shows that a small percentage of the population in Croatia is involved in lifelong learning process, consequently, with small increases of the percentage up to 0.1%. The latest data from 2012 show increase of 2.4%, which is inadequate for further development.

In 2011, 9.6% of women and 8.2% men were involved in lifelong learning processes. The Republic of Croatia is country with lowest rates of adults involved in lifelong learning processes. From this, we can see that there is a great need for the implementation and presentation of lifelong learning in eastern Slavonia, since additional learning processes and trainings may contribute to optimal restructuring and improving the performance of the labour market (Statistical office of the European Communities, 2014).

http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&plugin=0&language=en&pcode=tsdsc440 (Accessed 8 Dec 2013)

2.1 Types of Lifelong learning

Types of lifelong learning may vary according to the following criteria: according to the degree of organization, conditions in which learning takes place, which is based on: space, equipment, number and quality of textbooks, qualifications of teachers and trainers, the methods of learning / teaching, functionality and applicability of knowledge, skills and attitudes and degree of certification of educational outcomes. According to these criteria, types of lifelong learning are: formal education, non-formal education, informal education and unintentional or empirical learning. (Pastuović, 2008:256).

Formal education is education that represents the most organized form of learning. Formal education is formally structured, organized by educational institutions, resulting with acknowledged certificate, i.e. diploma / degree. Diploma / degree acknowledge certain level of education. Primary and secondary schools, colleges, universities and other official institutions carry out formal education.

Non-formal education is organized learning which does not result with acknowledged certificate or diploma / degree. Non-formal education is a systematic and organized educational activity that can be implemented in schools and non-school organizations, and includes the people of all age groups; from children to elderly people. The completion of some types of non-formal education can result with certificate, but not with acquired professional qualification.

Informal education is self-education that is carried out according to individual learning projects where person that designed learning project is learning as well. It is a form of intentional learning and it is less organized than non-formal education.

The main characteristics of informal learning are: lack of organization from the outside, informal structures. The decision are taken by student and is a pure form self-managed autonomous learning that comes from experience and situational challenges and takes place during daily life and work.

Unintentional or experiential learning takes place in various life roles: the role of students, labour, family / parenting, political, recreational, war and other roles. It is gained through work and different life situations, and it is not motivated by learning, but with the satisfaction of various economic, social and self-realizing motives.

2.2 Financing lifelong learning at the state level

Financing of education and lifelong learning in Croatia is marginalized what is best seen in the state budget where education is not priority.

In addition, statistically the allocations in education in the Republic of Croatia are much smaller than in other EU member states. In the last few years, allocations in financing education in relation to the total expenditure of the budget of the Croatian were about 9% in comparison to the overall allocations.

Also the allocation for education in the last few years has not been increased, which shows that there is no clear guideline of optimal financing of education, where in financing of lifelong learning there are different indicators.

Lifelong learning represents a particular trend when it comes to financing. When observed vertically, financing of life long leaning was brought to the regional and local levels. This is important when thinking of eastern Croatia and further prospects of the concept lifelong learning. *Table No. 3* shows the institutions that support lifelong learning in Croatia.

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Year	2009	2010	2011	2012
The Agency for education	112.573.133	42.931.747	40.974.559	37.919.096
The Agency for Science and Higher Education	19.649.622	20.733.942	20.150.643	21.065.599
Agency for Mobility and EU Programmes	-	21.058.604	46.459.583	69.043.283
Agency for Vocational and Adult Education	19.649.622	55.605.442	62.826.957	57.043.204
Total	151.872.378	140.329.735	170.411.742	185.071.182
Ministry of Science, Education and Sports	12.077.596.176	11.787.323.085	11.931.135.509	11.978.726.926

Table 3: Institutions that support lifelong learning in Croatia (shown in HRK millions)

Source: The author's creation according to the official data of the Ministry of Science, Education and Sports. available at: <u>http://public.mzos.hr/Default.aspx?sec=3281</u> (Accessed 20 Dec 2013)

In the framework of financing of lifelong learning by the state within the budget, the following institutional forms of activities and entities are included in lifelong learning processes:

- National contribution to the program for lifelong learning
- Development of the adult education system
- IPA I 2009 implementation of the youth program and implementation of programs for lifelong learning
- Youth in Action and Lifelong Learning
- Administration and management of the Agency for Vocational and Adult Education
- Promoting a culture of learning; week of lifelong learning
- Expert counselling activity
- The Council for Adult Education
- Development of Vocational Education System
- Development of the adult education system
- IPA IV 2007 which includes strengthening the human capital and employment and strengthening social inclusion and integration of people with disadvantage.

These programs were initially introduced in 2009 and they represent a change in the implementation and development of education and learning, showing significant expansion of formal education and creating necessary connections with the real labour market.

The concept lifelong learning is becoming a necessity and has an increasingly important role in building of the skills and competencies of individuals in the process of education.

Lifelong learning is the foundation for personal development and continuous adaptation to changing environment both in the individual's personal life, in the workplace and in society. Lifelong learning contributes to faster and easier response to the needs of the economy and society, and thus reduces the relative slowness of formal education at all levels.

However, the proportion of the population in Croatia, in age between 25 and 64, participating in education and training through the system for education of adults, according to data from 2011, is low, amounting only 2.3%, while the EU average is 8.9%.

Large proportion of the population of adults in Croatia are no longer competitive in the labour market, certain groups of people are already are socially excluded, and many people need improvement and upgrade of their key competencies.

With Croatian accession to the European Union and adoption of the Operational Programme

Human Resources Effective 2014 - 2020, lifelong learning has the potential for significant momentum, as it has, with the above mentioned funding programs, possibility to use European Social Fund (ESF).

The European Social Fund is one of the fundamental structural instruments of the EU, which provides to member states support in investments in human capital and strengthening the competitiveness of the European economy. (Ministry of Regional Development and EU Funds, 2015). ESF is an important instrument of the European Union aimed at the implementation of measures to strengthening of human capital and improving the adaptability of workers and enterprises. It also encourages social inclusion of disadvantaged groups, by preventing discrimination, in particular through the reform of the education system in order to increase the employability in the labour market, the relevance and quality of initial vocational education, trainings and higher education and continuous improvement of employees' competencies to create innovative knowledge-based economy.

Furthermore, the ESF encourages networking activities of higher education institutions, research organizations and businesses in order to develop human capital in science and research. (Operational Programme Human Resources 2014 - 2020)

Number of people who participated in the training, lifelong learning and other educational programs in the Member States are presented in further text.

3. The position of Croatia in education

Text bellow shows position of the education in Croatia, in comparison with the objectives of the strategic framework "Education and Training 2020", as well as the position of Croatian counties in education, in order to see the position of the region in relation to the rest of the Croatia. "Education and Training 2020" (ET 2020) is a strategic framework for cooperation in education and training in Europe.

ET 2020 provides common strategic objectives for the EU Member States, including the set of principles for achieving these goals, as well as the usual methods with priority areas for each periodic operation cycle, which consists of 6 defined criteria:

- 1. average of at least 15% of adults should participate in lifelong learning
- 2. share of 15-year-olds with poor performance in reading, mathematics and science should be less than 15%
- 3. share of 30-34 years of age with a high level of education should be at least 40%
- 4. share of individuals that are abandoning education and training early should be less than 10%
- 5. At least 95% of children between 4 and start of primary education should participate in early childhood education
- 6. share of individuals (20-34 years of age) leaving education, 1 to 3 years before the reference year and are employed should be at least 82%

Below, Table 4 shows Croatia's progress in achieving the objectives of the Strategy.

	OBJECTIVE OF THE STRATEGY 2020	RH
Lifelong learning	Min. 15%	2,5%
Bad results of 15-year-olds	Max. 15%	17,3%
The share of people 30-34 with a university degree	Min. 40%	26%
The proportion of those who leave education	Max. 10%	5%
Early Childhood Education	Min. 95%	72%
Those who are employed, but gave up school	Min. 82%	54%

Table 4: Indicators of Education of the Republic of Croatian according to the guidelines objectives of ET 2020

Source: The author's creation according to official data pages Statistical Office of the European Communities (Eurostat). available at: http://ec.europa.eu/eurostat (Accessed 15 Mar 2015)

Indicators that compare parameters are significantly different. Huge differences are present in most categories, except in the area of 15-year-olds with poor performance. The differences can be explained in two ways, mainly if we take into account that the structure in other European countries conditions the need to achieve these goals. Looking at the characteristics that are related to lifelong education in Croatia, it is evident that the population does not gravitate to education in the field of lifelong learning.

3.2 County Development Index

Table 5 compares development index of Croatian counties in relation to the share of educated population. Development Index takes into account the average income per capita, the average original income per capita, unemployment rate, population movement and the share of educated population in the population ranging from 15-65 years disaggregated by development index and groups.

		Value	s of the basic in	cators	2	Values of st	andardized in	dicators in relativ	on to the nacio	onal average	Developmer	nt index an	d groups
County	The average income per capita	Average original income per capita	Average un- employment rate	Status of the population	The share of educated population in the 16- 65 years old population	The average income per capita	Average original income per capita	Average un- employment rate	Status of the population	The share of educated population in the 16- 65 years old population	DEVELOP MENT INDEX	GROU	S
	20102012.	20102012.	2010.2012	20102001.	2011.	20102012.	20102012.	20102012.	20102001.	2011.			1
Virovitičko-podravska	19.600	1 1.596	3 25,9%	92.2	63,31%	1.56%	11,83%	1600'0	17,17%	5,30%	5,56%	<75%	4
Brodsko-posavska	19,455	1381	1 25,6%	96,7	68,75%	0,00%	0,70%	2,71%	69,14%	47,64%	18,43%	<75%	1
Vukovarsko-srijemska	20.365	1.441	1 25,4%	95,1	69,31%	9,81%	3,76%	4,87%	50,30%	44,68%	18,73%	~15%	1
Bjelovarsko-bilogorska	21.687	1.686	23,0%	82,4	65,52%	23,99%	16,55%	29,47%	19,91%	19,87%	23,29%	~15%	1
Požeško-slavonska	20,760	1 1.366	19,5%	6(03	67,92%	14,02%	%00%	64,66%	37,06%	35,63%	33,81%	<75%	1
Sisačko-moslavačka	25.426	2 336	3 24,1%	90,8	72,31%	64,20%	49,83%	12,81%	1,14%	64,39%	38,70%	~15%	L
Osječko-baranjska	24,500	2111	1 23,4%	6'98	73,08%	54,30%	38,27%	24,71%	59,46%	69,46%	46,07%	×15%	1
Karlovačka	26.635	2 16	7 20,1%	91,6	74,26%	77,15%	41,14%	60'09%	10,53%	77.17%	58,34%	<75%	T
Koprivničko-križevačka	22.887	7 2.650	15,4%	86,3	62,49%	36,89%	66,01%	106,88%	53,32%	%000%	58,19%	<75%	1
Ličko-senjska	24.731	2702	16,3%	203	73,73%	56,70%	68,69%	61,50%	%00°0	73,73%	64,82%	<75%	1
Međimurska	22.080	1 1.725	5 14,0%	9,99	71,20%	28,21%	18,37%	120,22%	101,40%	57,10%	69,65%	~15%	1
Krapinsko-zagorska	25.430	1772	12,9%	86,0	69,67%	64,24%	20,81%	131,78%	49,80%	47,05%	73,24%	<75%	1
Šibensko-kninska	24.562	2625	17,3%	69,5	78,96%	54,89%	64,64%	87,34%	100,72%	108,00%	80,93%	75-100%	II.
Varaždinska	25,796	2076	9 12,5%	97,2	74,46%	68,18%	36,59%	136,20%	74,47%	78,52%	86,34%	75-100%	II.
Splitsko-dalmatinska	26.016	3.090	19,5%	104,2	83,09%	70,54%	88,67%	64,80%	154,04%	135,13%	93,75%	75-100%	II.
Zadarska	24.160	3.174	15,1%	109,1	77,97%	50,60%	93,00%	109,58%	211,23%	101,52%	106.39%	100-125%	III.
Dubrovačko-neretvanska	27,74	3.496	13,3%	104,0	83,74%	89,11%	108,70%	127,80%	152,47%	139,34%	120,84%	100-125%	III
Zagrebačka	29,556	2.826	11,2%	106,5	76,82%	108,59%	75,08%	148,76%	180,66%	83,98%	124,23%	100-125%	III
Primorsko-goranska	32.815	4.751	12,7%	60,3	84,97%	143,57%	174,46%	134,29%	8,24%	147.46%	139,21%	>125%	N.
Istarska	31.997	4.884	1,8%	104,1	80,78%	134,80%	181,01%	183, 15%	153,41%	119,98%	156,80%	>125%	N.
Grad Zagreb	42.175	5.901	10,6%	101,9	86,93%	244,20%	238,28%	154,81%	127,78%	180,27%	186,44%	>125%	N.
Republika Hrvatska	28.759	3.310	16,0%	59,4	961'11	400'004	100,00%	100,00%	100,00%	100,00%		(Eas	
XEU	42.175	5.997	25,9%	109	%6'98	102			66.5			(6.5	1.00
min	19.455	1.368	7,8%	91	62,5%								
							A CONTRACTOR OF A CONTRACTOR A		-				
							Assiste	d areas					

Assesment and classification of counties based on development

Previous Table No. 8 is taken from the official site of the Ministry of Regional Development and EU Funds, and it shows that the development index moves in proportion to the share of educated people in several counties.

Therefore, there are no exceptions in any county. It is evident that there are significant differences between counties that are located in the inland of the Croatian when compared to Zagreb, the northern part of the Croatian and other counties, which gravitate towards the sea. Osijek-Baranja County has a slightly better position compared to other counties in the inland due to the strong influence of the University, and the fact that Osijek is largest city in the region.

4. Human capital observed through entrepreneurial activity and innovation

With aim to analyse the impact of human capital as a function of socio - economic development of the region, entrepreneurial activity and innovation are taken as the basis for economic development and as such, are analysed in the continuation of this work.

4.1. Entrepreneurial activity on the example the Centre for Entrepreneurship

Table below presents analysed data of the Centre for Entrepreneurship in Osijek with the aim to provide insight into the impact of human capital of formal education in socio - economic development of the region.

Centre for Entrepreneurship is an association with the mission to promote proactive spirit and culture of entrepreneurship between the civil society, academic and business communities, institutions, public administrations and citizens through the exchange of ideas, information and knowledge necessary to increase competitiveness, personal development and the development of local communities that contributes in improving the entire Croatian economy.

It encourages the creation of an entrepreneurial culture, entrepreneurial mind-set and behaviour in everyday life and in the workplace through information, advice, training, networking and implementation of various projects.

Table below gives the information on clients that used Centre for consultation in the period of 2012 -2014, in order to determine level and nature of their education.

Main reasons for visiting the Centre were opportunity for an entrepreneurial venture, need to enter into entrepreneurship, expansion of existing businesses, business development and so on. All reasons indicate on the proactive entrepreneurial behaviour, which is a significant driver of economic development.

3		
TERTIARY EDUCATION	145	
Higher school	29	41 55%
College	114	41,5570
Doctorate	2	
SECONDARY		
EDUCATION	204	
Low skilled worker	5	58,45%
Skilled worker	7	· ·
High school	192	
TOTAL	344	

Table 6: Entrepreneurial activity of clients of the Center for Entrepreneurship in Osijek from 2012 to 2014 due to the level of education

Source: The author's creation according to official data of the Center for Entrepreneurship in Osijek

From a total of 344 clients in period 2012-2014, 41.55% had completed higher education (college, university or doctorate). Secondary education had a 58.45% of clients (low skilled worker, skilled worker or high school). These data give an insight in the formal education of clients. Additionally, it would be useful to explore the needs of clients for additional forms of education related to lifelong learning. This findings would represent significant help in creating the necessary further training programs for the real market.

Table 7 presents the clients of the Centre for Entrepreneurship in the period from 2012 until 2014 year, with main reason for visiting the Centre was recognized entrepreneurship opportunities.

Unlike entrepreneurial activity out of necessity, entrepreneurship opportunities increased economic potential and development.

 Table 7: Entrepreneurial activity of opportunities clients Center for Entrepreneurship in

 Osijek from 2012 to 2014 Due to the level of education

TERTIARY EDUCATION	34,55%
SECONDARY EDUCATION	65,45%

Source: The author's creation according to official data of the Center for Entrepreneurship in Osijek

34.55%, of clients that recognized the opportunity in the market and for that reason decided to collaborate with the Centre for Entrepreneurship had high level of education, and 65.45% had secondary level education.

Table 8 shows the clients of the Center for Entrepreneurship in Osijek with completed secondary and university education, presented according to the natural and social sciences.

Table 8: Entrepreneurial activity of clients of the Center for Entrepreneurship in Osijek from 2012 to 2014 due to the view of the nature of education

	SECONDARY EDUCATION	TERTIARY EDUCATION
Natural sciences	47,31%	32,84%
Social sciences	52,69%	67,16%

Source: The author's creation according to official data of the Center for Entrepreneurship in Osijek

47,31% clients of the Centre with secondary, had natural sciences background, and 52.69% Social Sciences. When looking to the clients with university education, 32.84% had a degree in natural sciences, and 67.16% in social sciences.

4.2 Innovation as a development potential

In fact, when thinking about how to connect development and formal education, without statistics and numbers that have already been explored, different approach was chosen. Desired way of comparison was that individuals with secondary education have the same starting position as individuals with high education, and that they can be compared.

Individual innovation was taken as a basis for this comparison. Innovation is the basis of development, not only development of the businesses but also development of the activities and finally, the development of the state.

The data was found on the Internet at various sites, such as fairs innovation, international exhibition of inventions ARCA, INOVA etc, researching what percentage of innovators had a university degree, and how many have completed secondary school.

49 different projects in last two years was taken into account (from already developed business with generating incomes, but also those waiting for investors and thus represent growth potential) and 87.55% of innovators had higher education.

This reveals the connection between development and degree of formal education. Of course, not as the sole condition, but as a definite advantage. In this study, only individual projects were taken into account.

Ser.No.	Innovation	Innovators	Degree
1.	Farmeron	M. K.	University degree
2.	Hrvatska aplikacija za brže zvanje taksija u New Yorku	M. Š.	secondary education
3.	Hrvatska aplikacija za brže zvanje taksija u New Yorku	T. C.	secondary education
4.	Myrio - digitalni shop asistent	I. M.	University degree
5.	Infraredesign maskirna uniforma -dualni dizajn na tekstilu i koži	I. Ž. S.	University degree
6.	Infraredesign maskirna uniforma – dualni dizajn na tekstilu i koži	К. Р.	University degree
7.	Infraredesign maskirna uniforma – dualni dizajn na tekstilu i koži	J. Ž. V.	University degree
8.	Infraredesign maskirna uniforma – dualni dizajn na tekstilu i koži	V. Ž.	University degree
9.	Detox-Destress Lavander	R. L.	University degree
10.	Detox-Destress Lavander	I. L.	University degree
11.	Naprava za izradu čevapa	K. Š.	secondary education
12.	Naprava za vezanje brodova	M. V.	University degree
13.	Društvene igre "Osvoji Jadran" i "Mediteraneut"	S. V. Č.	University degree
14.	Upravljanje procesima	T. L.	University degree
15.	Višenamjenska didaktička RGB konzola – igračka	A. O.	secondary education
16.	LED Display	B. I.	secondary education
17.	Vakumski motor "Jedač plamena"	M. P.	University degree
18.	TTK – Tvornica turbina	M. A.	University degree
19.	Squee	I. I.	University degree
20.	Squee	K. K.	University degree
21.	Squee	I. K.	University degree
22.	Madbarz	N. M.	University degree
23.	Madbarz	L. M.	University degree
24.	PhotoMath	D. S.	University degree
25.	BabyWatch	S. M.	secondary education
26.	SalesPod	M. L.	University degree
27.	Nikel probiotik krema	M. B.	University degree
28.	Sustav za dezinfekciju kamiona za smeće	N. K.	secondary education
29.	Nadogradivi produžni kabel	D. F.	University degree
30.	Hidraulični podupirač	P. M.	secondary education
31.	Hidrolazur	N. M.	University degree
32.	Postupak i stroj za kompleksnu pripremu	P. L.	University degree

Table 9: List of innovation with the education of their innovators

Ser.No.	Innovation	Innovators	Degree
	tla i sjetvu		
33.	Terrestrica	S. N.	University degree
34.	Dvodijelni poklopac za lampione	V. T.	University degree
35.	WhoAPI	G. D.	secondary education
36.	WhoHack	E. B.	University degree
37.	PHARE	D. Z.	University degree
38.	CIPMANN	M. Č.	University degree
39.	CIPMANN	N. R.	University degree
40.	Multifunkcionalne ženske cipele	V. V.	University degree
41.	Trodjelni podizač mreže plivarice	P. B.	secondary education
42.	Projekt milenijskog kotača	Z. D.	University degree
43.	Endy Motors	E. Š.	University degree
44.	Peri & Dery	A. P.	University degree
45.	Bipolarni tranzistor s horizontalnim tokom struje	T. S.	University degree
46.	Metode za slijepo razdvajanje signala	I. K.	University degree
47.	3D Hologramski Display	I. K.	secondary education
48.	Aplikacijama do bolje socijalne uključenosti – ICT-AAC	V. P.	University degree
49.	Automatska vizualna inspekcija kvalitete proizvoda	S. L.	University degree

Source: The author's creation

 $SSS - 11 \rightarrow 22,45\%$ VSS - 38 \rightarrow 77,55% Total - 49

The structure of innovators in terms of qualifications and formal education indicates that, in much bigger proportion, innovators are individuals with university degree.

It would be desirable to examine the nature and characteristics of innovation and initiated businesses and gather information on skills and competencies that should and must be offer in the labour market, especially since innovation and conceptual content is always related to development and future use which can certainly affect better planning and creation of a continuing education program.

5. Conclusion

Depopulation and the aging of population are two important processes that characterize the demographics in Croatian from 1990 until today. Projections up to 2050 suggest a tendency of increase of aging of the population, but also the aging of the population in the working age, as well as significantly reducing the number of children in high school age. Such changes in natural dynamics, migration balance and in the age structure of the population, significantly affect the reproduction of the labour force, which affect the total work potential and labour productivity, and the overall economic development of the Croatian, and with it the perspective of the eastern Croatian.

The characteristics of formal educated in Croatia are such that they cannot contribute to the instant employability which is partly the reason an economic stagnation.

Frameworks of lifelong learning offer better prospects, but are also ways of measuring the need to educate those who require flexible and adaptable systems to create a continuing education program and research, with the need to implement more dynamic and more

frequent review and periodic revisions in line with labour market demands.

According to the World Bank successful transition of countries in the knowledge society includes long-term investments in education, development of innovative capabilities, modernization of information and communication infrastructure and effective legal and economic framework. Accordingly, it is clear what steps have to be taken in eastern Croatian. That is also visible by the examples of entrepreneurial activity and innovation, which represent a reference framework for the creation of further needs for individuals with proactive role in generating employability and creating additional value for the economy. These examples represent the trends in the creation of a continuing education program, because they are aimed at better identification of the needs and desires of individuals for this form of education.

REFERENCE

Pastuović N. (1999; 38): Educology, Integrative Science on lifelong education and upbringing, Znamen, Zagreb

Previšić V., Šoljan N., Hrvatić N. (2007): Pedagogy, According to lifelong education and knowledge society, Croatian pedagogical society, Zagreb.

Švarc, J. (2009): Croatia in the knowledge society, controversy and innovation perspective policy, school book / Institute of Social Sciences, Zagreb.

Buljubašić – Kuzmanović, V. (2009; 57-57): Cooperative learning as an indicator of the quality of education, life and school

Marcetić, A., Krstanović, I., Uzelac, Z. (2010) : Key competences for lifelong learning-digital competence, CARNet User Conference – CUC.

The National Bureau of Statistics Available at: http://www.dzs.hr/Hrv_Eng/ljetopis/2011/SLJH2011.pdf (Accessed 12 Mar 2015)

Eurostat. Available at:

http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&plugin=0&language=en&pcode=tsds c440 (Accessed 8 Dec 2013)

The Ministry of Science, Education and Sports. Available at: http://public.mzos.hr/Default.aspx?sec=3281 (Accessed 20 Dec 2013)

The Ministry of Regional Development and EU Funds: Available at: http://www.strukturnifondovi.hr/op-ucinkoviti-ljudski-potencijali-2014-2020-780 (Accessed 20 Dec 2013)

The Ministry of Regional Development and EU Funds. Available at: http://www.mrrfeu.hr/default.aspx?id=405 (Accessed 15 May 2015)

Internal data of the Center for Entrepreneurship in Osijek.