GLOBAL
ENTREPRENEURSHIP
MONITOR **CROATIA**

What makes Croatia a (non)entrepreneurial country?

GEM CROATIA 2017

Slavica Singer ▪ Nataša Šarlija ▪ Sanja Pfeifer ▪ Sunčica Oberman Peterka

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What makes Croatia a (non)entrepreneurial country?

GEM CROATIA 2017

(with analysis of the research results of 'Development and application of growth potential prediction models for small and medium enterprises' financed by the Croatian Science Foundation)

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Miroslav Rebernik, PhD, University of Maribor, Faculty of Economics and Business

"In GEM Croatia 2017 publication there is a special chapter (Ch.5) presenting the results of the research project 'Development and application of growth potential prediction models for small and medium enterprises in Croatia'. The results are complementary to the GEM findings and strengthen the informational base on understanding the pattern of businesses with growth potential in Croatia… The methodological correctness of the GEM Croatia 2017 is excellent, as well as its cognitive value and scope of novelty. Therefore, I strongly recommend that the proposed publication Global Entrepreneurship Monitor Croatia 2017 to be published in the form and content submitted for review."

Bahrija Umihanić, PhD, University of Tuzla, Faculty of Economics Tuzla

"Understanding the contribution and importance of the results of the GEM study, the way they are used by governments and ministries of the most developed countries of the world, I am free to recommend to relevant ministries and government agencies to become partners and systematically support the efforts of the researchers of the GEM team Croatia and use the results of the GEM study relying on examples of good practice presented in the study (Sweden, Slovenia, Germany)."

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Foreword by the main sponsor

Croatia has been included in the worldwide Global Entrepreneurship Monitor Consortium since 2002, which monitors key components of national entrepreneurial capacity on annual basis (measured by intentions and intensity of starting business ventures, share of growing businesses and quality of entrepreneurial environment), allowing Croatia to manage development through policies based on facts, not on assumptions.

Entrepreneurial capacity of a country is always a result of the interaction of entrepreneurial activity at personal level and entrepreneurial environment and result of cooperation between numerous institutions (from creators of policies and regulatory framework, to educational, research and financial institutions, civil society…). Therefore, in most European Union countries ministries of economy, ministries of labour, state development agencies, state employment agencies, banks (from central, development to commercial), economic chambers and employers' associations participate in the GEM study as partners with research institutions, providing financial support and as users of the results.

The recognised constraints of economic growth and cooperation of numerous institutions have resulted in the National Reform Programme for 2018, whose goals include strengthening competitiveness, linking education to the labour market and creating conditions for sustainable public finances.

Special emphasis is placed on improving the regulatory framework for fostering innovation, entrepreneurship and investment, whereby reduction of bureaucracy through the use of digital platforms and tools will significantly simplify, accelerate and cheapen many administrative processes thus facilitating activities of entrepreneurs and investors.

Entrepreneurs, that is, understanding entrepreneurs' needs and the challenges they face in the marketplace are at the centre of continuous work on improving entrepreneurial environment, i.e., creating a stimulating entrepreneurial and investment environment with the ultimate goal of transforming Croatian entrepreneurship into the driver of economic growth and development.

Martina Dalić

Vice President of the Government of the Republic of Croatia

and Minister of Economy, Entrepreneurship and Crafts

Zagreb, April 24, 2018

SUMMARY OF THE MOST IMPORTANT POINTS

Croatia has been participating in the Global Entrepreneurship Monitor (GEM) study, the world's largest survey of entrepreneurship, since 2002, and this report presents the research results for 2017. Comparison with the results of the study in 2016 and 2015 provides insight into changes. Involvement in the GEM study enables Croatia to intervene in various aspects of entrepreneurial capacity, which are based on research findings and not on assumptions (from shaping national policies, to launching educational programs or creating financial instruments for different phases of life cycle of a business).

GEM study builds the basis for vertical and horizontal comparison, by using a unique conceptual framework of research and unique indicators, which monitor changes in entrepreneurial activity at the individual level and in the quality of entrepreneurial environment. Entrepreneurial activity at the individual level is monitored through different stages of entrepreneurial behaviour (from recognition of business opportunities, through intentions, to starting and growing a business venture, and exiting entrepreneurial activity) and through characteristics of entrepreneurial behaviour (competencies, fear of failure, social status). Since 2001, entrepreneurial employee activity is also monitored. Entrepreneurial environment is monitored through dimensions of access to money, government policies (according to priorities, according to regulatory framework), government programs, education (secondary and below, and above secondary), transfer of research and development, professional and commercial infrastructure services, physical infrastructure and social and cultural norms.

By using standardized questionnaires and research methodology, opinions of a representative sample of adult population aged 18-64 years (at least 2,000 in each country), and selected experts (at least 36 in each country) are collected each year. This allows each country to monitor the changes and patterns of entrepreneurial behaviour within its borders (since 2000 for Croatia) and to compare itself with others, either through the criterion of belonging to the same stage of development of the economy, or geographically, or with individual countries with respect to some specificity because of which such a country is chosen as a role model (benchmark).

The following source should be used for comparison of Croatia with all countries that participated in GEM studies in 2017, 2016 and 2015:

http://gemconsortium.org/report

About entrepreneurial activity of Croatia in the EU perspective:

1. **Perceived opportunities** in the immediate surroundings of the participants in the study has significantly increased (from 22.3% in 2015 to 33.6% in 2017), which enabled Croatia to "become unglued" from the rear of the EU for the first time and is a sign of return of business optimism. Nevertheless, the difference between Croatia and the EU is still very large (33.6% vs. 42.6%), which also speaks of a great difference in the potential that determines entrepreneurial capacity of a country. At the same time, Croatia is at the top of EU by expressed entrepreneurial intentions (it was in the first place in 2017), but this is the result of necessity rather than of perceived opportunities.
2. **Social values** do not support entrepreneurial activity. In European perspective, Croatia is in the first third according to the attitude that being an entrepreneur is a good career choice, but is the last among the EU countries involved in the GEM study according to the attitude about the social status of successful entrepreneurs. Nearly two-thirds of respondents (at the level of about 62% in the 2012-2017 period) have a positive attitude about entrepreneurial career (this is confirmed by the fact that one-fifth of respondents express intention to launch a business venture – above the EU average), but this is not followed by attitudes about social status, nor by media attention to entrepreneurship, which reduces the capacity for entrepreneurial activity.
3. **Entrepreneurial activity** of Croatia measured through early activity – TEA index (up to 42 months of activity) and activity of "established" entrepreneurs (more than 42 months of activity) still shows two worrying situations: low motivational index and low share of "established" businesses. Croatia in 2017 maintains the previously achieved intensity of early entrepreneurial activity (8.9%), and according to this indicator, it is even above the average of EU countries involved in the GEM study, but this is the result of strengthening entrepreneurial activity out of necessity, and not because of perceived opportunities. The motivational

index (ratio of TEA because of perceived opportunity and TEA out of necessity) returned to 1.8 in 2017 (after a slight recovery to 2.2 in 2016). According to the motivational index, Croatia is at the rear of the EU throughout the observed period, and in 2015 it was in the last place. The significance of the motivational index for assessing the capacity for entrepreneurial activity can be seen from the comparison with the motivational index average for the EU (e.g. in 2017) of 5.0, which means that in the EU, on average, there are 5 times more of those who enter entrepreneurial activity because of perceived opportunity, while in Croatia there are only 1.8 times more such entrepreneurs. At the same time, in the 2015-2017 period Croatia increases the density of "established" businesses (number of "established" businesses per 100 adult residents) from 2.8 in 2015 to 4.4 in 2017, but this is still only 62% of the EU average in 2017 (compared to 43% of the EU average in 2015, when Croatia was in the last place because of the lowest density of "established" businesses). Such a low level of presence of "established" businesses is a long-term characteristic of the Croatian economy, which still warns of a low basis for generation of new value.

4. Croatia continues to have **a small number of growing businesses,** which the GEM study defines using the criteria of innovation in the use of new technologies, innovation in the development of new products, exposure to competition, export orientation and expectation of new employment. The already observed occurrences continue in 2017: Croatia has significantly more businesses (both early-stage and "established") that invest in the latest technologies, but there are less businesses with new products, because of which they are exposed to greater competition in the market. U 2017, Croatia has 22% of new businesses and 24.1% of "established" businesses with the latest technology against 15.6% of new and 7.5% of "established" such businesses in the EU. In the 2015-2017 period, as many as around 70% of new and more than 75% of "established" businesses in Croatia have products that are new to no one. The longevity of this pattern of entrepreneurial activity (technological readiness without new products) indicates the reason why Croatia fails to move on the competitiveness scale. Competitiveness is not achieved through technological equipment, but through innovative products. Lack of new products prevents Croatia from exiting the markets with intense competition, and most businesses are still swimming in the "red ocean" of the domestic market. New ventures are more export-oriented (51%, exports more than 26% of total revenue) than "established" businesses (40%), but the presence of ventures that do not export anything is increasing in both categories of businesses.
5. According to **entrepreneurial employee activity** (activity on the development of a new product / service, or launching a new business unit for the employer), Croatia is above the EU average throughout the observed 2015-2017 period. In 2017, 9.2% of employees in Croatia performed entrepreneurial activity within their company, while the average for EU countries that participated in the GEM study is 7%. This form of entrepreneurship represents hidden entrepreneurial capacity in Croatia, which no one takes into account, neither businesses, nor national policies in the field of innovation, education or tax relief.

About entrepreneurial activity of Croatia in the perspective of countries to whose development group Croatia belongs (efficiency-driven economies and economies in the transition between efficiency and innovation-driven economies):

6. Comparison of Croatia with the group of countries to whose development stage it belongs shows that Croatia lags behind the average of these countries in the area of opportunity recognition, by intentions to enter entrepreneurial activity, by intensity of entrepreneurial activity, by innovation capacity (measured by the share of "established" businesses with new products). Croatia is better than the average of this group of countries by internationalisation, by use of new technologies and by entrepreneurial employee activity.

Distribution of entrepreneurial activity:

7. **Entrepreneurial demographics** show relatively stable relations in distribution of entrepreneurial activity both by gender and age. Croatia is still significantly a "male" country by entrepreneurial activity, at the level of average of EU countries that participated in the GEM study in 2017, but with a significantly less balanced relationship of entrepreneurial activity according to the gender criterion than in some countries, e.g. the Netherlands (1.8 in Croatia vs. 1.1 in the Netherlands). Entrepreneurial activity by age structure slightly oscillates around the EU average, except in the category of young people aged 18-24 years (where more young people are entrepreneurially active in Croatia than in the EU) and in the 55-64 years of age

category (there are less entrepreneurially active people in Croatia than in the EU). The pattern that **more educated people are more entrepreneurially active** is still being confirmed, by which Croatia is similar to the EU average. With regard to **sectoral distribution** of entrepreneurial activity, in the 2015-2017 period, there is an increase in entrepreneurial activity in the extractive industry and a decline of business ventures in the sector of services oriented to businesses and consumers. Entrepreneurial activity (measured by the TEA index) varies within the observed period with regard to **regional distribution**, and inclusion of the motivational index indicates visible differences between individual "regions". Although motivational index is low in all the "regions" (except in regions Istria, Primorje and Gorski Kotar and Zagreb and surroundings), the worst ratio between entrepreneurial ventures started because of perceived opportunity and out of necessity is in Lika and Banovina. There is a clear connection between the entrepreneurial capacity of a "region" and the level of development measured by "hard" indicators (GDP pc, development index, unemployment). In 2017, out of six "regions", Zagreb and surroundings is in the first place by entrepreneurial activity (measured by the TEA index), in the second place by motivational index, in the first place by GDP pc and development index, with a below-average unemployment rate. Slavonia and Baranja has the lowest entrepreneurial activity, shares the lowest motivational index with Lika and Banovina, but also the lowest development index, GDP pc and the highest level of unemployment.

Quality of entrepreneurial environment:

8. **Entrepreneurial environment** in Croatia is still more limiting than stimulating for entrepreneurial activity. According to experts' ratings, only two components (availability and quality of physical infrastructure – telecommunications and transport, and domestic market dynamics) have a **stimulating effect on entrepreneurial activity.** Particularly **restrictive components** of entrepreneurial environment in Croatia are government policies towards the regulatory framework, presence of significant barriers to market entry, low level of transfer of research to the business sector, cultural and social norms (value system), and insufficient contribution of primary and secondary education to building entrepreneurial competencies of young people.

Responsibility for changes lies on individuals and institutions

9. Entrepreneurial capacity of a country depends on the entrepreneurial capacity of the individual, which is realized in interaction with the entrepreneurial environment. It is obvious from this definition that **responsibility for changes rests both at the level of each individual and at the institutional level.**

10. A **social consensus** that entrepreneurship is a form of democratization of society is needed, because training for proactive, innovative and responsible behaviour empowers individuals, which increases inclusion capacity. From the perspective of such understanding of entrepreneurship, it is important that the capacity for entrepreneurial activity is evenly distributed in society, regardless of gender, age, educational structure, economic sector or region, and that **government policies serve to fulfil such expectations.**

11. Uniform quality of all components of entrepreneurial environment is a challenging but necessary goal, because the design of individual components depends on developmental heritage, political priorities, available resources (educated people and money) and social and cultural determinants in which entrepreneurial activity is taking place. However, knowing the (non)quality of components of entrepreneurial environment in own country and possibility of comparison with countries that have the best solutions, which is just what the GEM study allows, requires an analysis of good practice and the context in which such good practice has contributed to strengthening the connection between entrepreneurial activity and economic growth (through contribution to employment and gross domestic product). This is not the responsibility of only one ministry, but of **many ministries** (entrepreneurship, economy, education, science, justice, labour, regional development), **agencies and other institutions (universities, schools, financial institutions, NGOs, associations, media).**

12. A change of situation cane be ensured by **coordinated and simultaneous government policies** on creating stimulating entrepreneurial environment (primarily by eliminating administrative barriers), **educational institutions** (by enabling everyone to build their entrepreneurial competencies in the education process), **business and financial sector** (by strengthening competitiveness based on innovation and growth) and **individuals** (who will start business ventures because of perceived opportunity).

Recommendations – more proactivity, innovation and responsibility in solving the problem of lagging behind

13. **Recommendations for individuals** – responsibility for personal decisions (insist that the reform of the educational system contributes to the development of entrepreneurial competencies of young people – the youth, teachers and parents should have an active role in that, because this is one of the eight lifelong competencies; informal learning, self-employment).

14. **Recommendations for institutions** - more responsibility towards citizens:

- **Cooperation and simultaneity, using the principle of open coordination:** harmonization of policies, strategies, programs and instruments at the ministry level.
- **Simplification of the regulatory framework** in which entrepreneurial activity is taking place must be a priority, because without this it still would not be possible to exploit "windows of opportunity" that open up due to market dynamics.
- Initiate policies / programs to encourage **balancing of entrepreneurial activity** with regard to gender, age, sectors and "regions".
- Strengthen the **innovation capacity** of the economy through encouraging cooperation between research institutions and the economy, and internationalisation of research initiatives.
- **Increasing the quality of public administration** is one of the components of entrepreneurial environment that plays an important role in creating a stimulating environment in which entrepreneurs operate.
- Develop a framework for **statistical monitoring of small and medium businesses** and connect statistical databases on business entities, ownership, import / export activities, and add indicators on innovation. Without this, it is impossible to provide comparative information with which individual businesses can be measured (sector, the best). At the sub-national level, the availability of statistical information is very incomplete and temporally inconsistent, which significantly impedes regional development management.
- **Professional infrastructure** that provides services to those who are starting entrepreneurial activity and those who want to develop innovative business ventures with growth potential must ensure a wider spectrum and a higher level of services, particularly those that contribute to reducing business failures (opportunity recognition, competencies, financial literacy) and those that contribute to increasing the competitiveness and internationalisation (design more sophisticated financial literacy, managerial empowerment, competitive intelligence…), because numerousness of institutions does not solve the issue of the lack of quality services for entrepreneurs.
- **The media and education** must recognize their role and responsibility for the low level of social and cultural norms (non-supportive value system) in relation to the valuation of entrepreneurial activity and shape their programs and activities based on that.

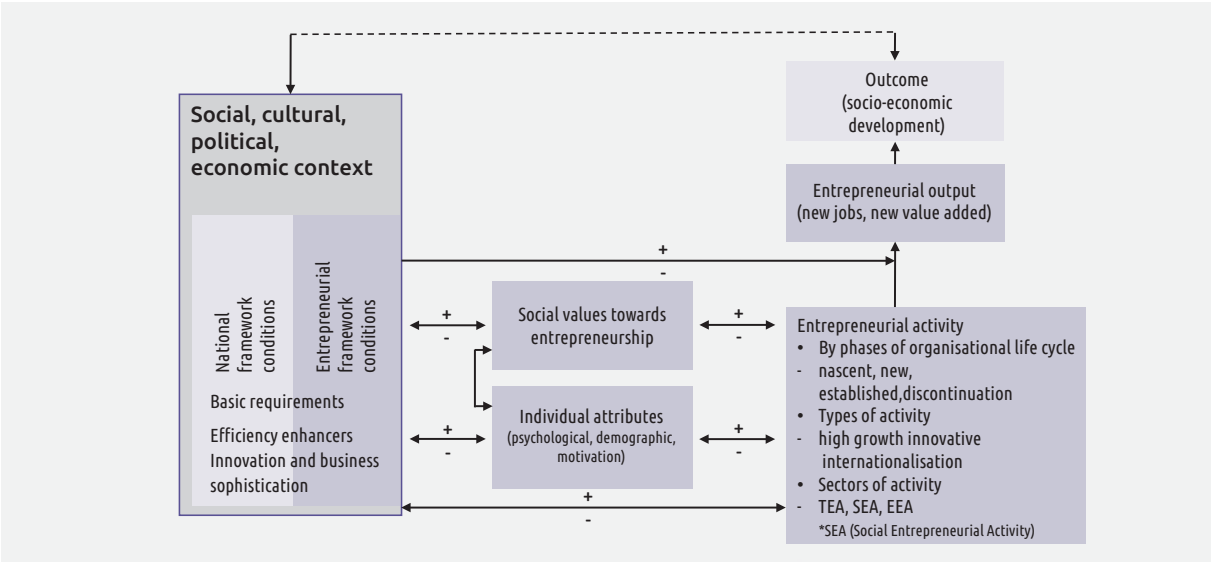
1 Introduction

Global Entrepreneurship Monitor (GEM) is the world's largest empirical study of entrepreneurial activity, started in 1999 at the initiative of the ten most developed countries in the world[1] . Croatia has been participating in the GEM study since 2002 and this report presents the changes in the entrepreneurial profile of Croatia in 2017, with a comparison with the situation in 2015 and 2016.

GEM conceptual framework and objectives of the study

The GEM study is based on the conceptual framework that is based on the assumption that national economic growth depends on the capacity of the society to contribute to the creation of new value through coordinated interactions of macroeconomic factors, entrepreneurship ecosystem and entrepreneurial activity at the level of the individual[2] . GEM study monitors the intensity of connections between complementary mechanisms of new value creation (people with the intent to start a business venture, starting business ventures, growth of existing companies) and the environment from the perspective of an individual who acts proactively, innovatively and responsibly for their choices (Figure 1).

Figure 1 Conceptual framework of the GEM study – interactions between people and entrepreneurial environment*



*Types of entrepreneurial activity: TEA – profit-oriented early-stage entrepreneurial activity, SEA – early-stage entrepreneurial activity in social entrepreneurship, EEA – entrepreneurial employee activity
Source: according to Global Entrepreneurship Monitor 2017/18 Global Report, 2018, p. 21 http://www.gemconsortium.org/report

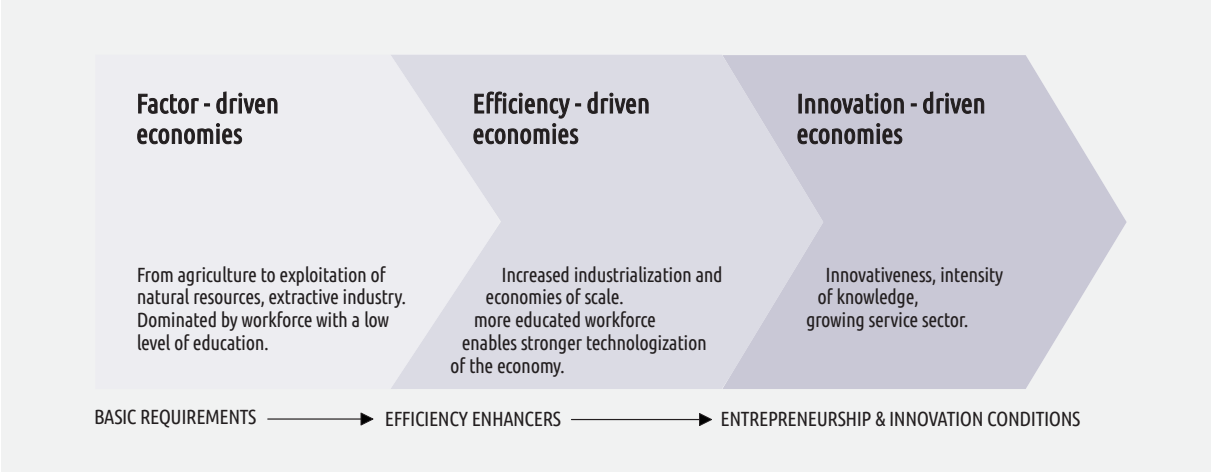
[1] The GEM study was started in 1999 as an initiative of a group of researchers from London Business School, United Kingdom and Babson College, USA. The ten most developed countries (G-7 countries: France, Italy, Japan, Canada, Germany, USA, United Kingdom, and Denmark, Finland and Israel), who wanted to find out why entrepreneurial capacity of the USA is greater than in other developed countries, participated in the study that year.

[2] The insights obtained through GEM surveys conducted since 1999, together with research testing of the set assumptions, enable updating of the conceptual framework without compromising the quality of comparison of the collected data and the created indicators since the beginning of research.

Such a conceptual research framework is based on a holistic approach in defining entrepreneurship as a multidimensional phenomenon of interaction between an individual and the environment, which is present in all social organizations, not only in economy, but also in education, research, culture, government institutions and local administration. For now, GEM monitors entrepreneurial activity only in the sphere of business ventures, which can be profit or non-profit oriented.

GEM study has confirmed the characteristic profiles of entrepreneurial activity (type and intensity) for groups of countries whose economies belong to different stages of development. Because of this, Porter's categorization of economies into economies whose development is based on basic factors, on efficiency or innovation (Porter, 1990; Porter et al., 2002), is used in the analysis of the collected data. This categorization has also been adopted by the World Economic Forum for competitiveness research (Figure 2).

Figure 2 Characteristics of the economy in different stages of development and key development focuses[3]



For grouping countries according to the criterion of the stage of development their economies are in, the World Economic Forum uses the following weights:

Table 1 Weights for grouping countries according to the stage of development criterion, World Economic Forum

	Development of the economy based on				
	Factor-driven development	Transition	Efficiency-driven development	Transition	Innovation-driven development
GDP (USD)	< 2,000	2,000-2,999	3,000-8,999	9,000-17,000	>17,000
Weight for basic requirements	60%	40-60%	40%	20-40%	20%
Weight for efficiency enhancers	35%	35-50%	50%	50%	50%
Weight for innovation and sophistication factors	5%	5-10%	10%	10-30%	30%

Source: Schwab, K. (ed.), The Global Competitiveness Report 2017-2018, Geneva, World Economic Forum, 2017, p. 332

By introducing the assumption about the differences in entrepreneurial capacity and the structure of entrepreneurial activity (different combination of types of entrepreneurial activity) depending on the stage of the development of an economy, GEM study also provides an important information to governments on what should be the focus of policies aimed at strengthening country's development capacity and quality of people's lives.

[3] According to Schwab, K. (ed.), The Global Competitiveness Report 2017-2018, Geneva, World Economic Forum, 2017, p. 12, 319-320

The development of economies that rely on basic factors depends primarily on the development and improvement of institutions, infrastructure, macroeconomic stability, health and primary education. For analytical reasons, GEM study also includes economies that are transitioning to efficiency-driven economies in this group. In economies at this stage of development, entrepreneurial activity out of necessity is present more often than entrepreneurial activity due to perceived opportunities.

In economies whose development is based on efficiency, government policies are (or should be) devoted to establishing harmonized functioning of labour and capital markets, attracting foreign investment and educating workforce for a higher level of technologization. For analytical reasons, GEM study also includes economies that are transitioning to innovation-driven economies in this group. At the same time, this is a platform where more intensive entrepreneurial activity due to perceived opportunities, and not out of necessity, can be expected, which is extremely important for Croatia, which is transitioning towards innovation-driven economies.

The third stage of development presupposes an economic structure that has competencies to innovate in at least some sectors at the global technological frontier (Porter et al., 2002), which means that it has the capacity to generate, but also to commercialize new knowledge.

Within this conceptual framework, the basic objectives of the study were designed:

- Identifying the factors that influence the nature and level of entrepreneurial activity of a country
- Measuring the differences in entrepreneurial aspirations, behaviour and activities between different countries, and the quality of entrepreneurship ecosystem within which entrepreneurial activity is carried out
- Determining policies that may enhance the level of entrepreneurial activity in a country

In the triangle of these objectives, the results of the GEM study have significant theoretical and applicable influence in answering two important questions:

- To what extent are the differences in entrepreneurial activity connected to overall socio-economic growth of a country?
- What can governments do in order to influence the level of entrepreneurial activity in a country, especially through education?

Theoretically grounded conceptual framework and strong empirical component of the study enable creating a consistent basis for policy interventions aimed at improving entrepreneurship ecosystem within which (and in interaction with which) entrepreneurial activity of individuals takes place. In the last ten years, countries that participate annually in the GEM study represent about 70% of the world's population and generate around 85% of the world's gross domestic product.

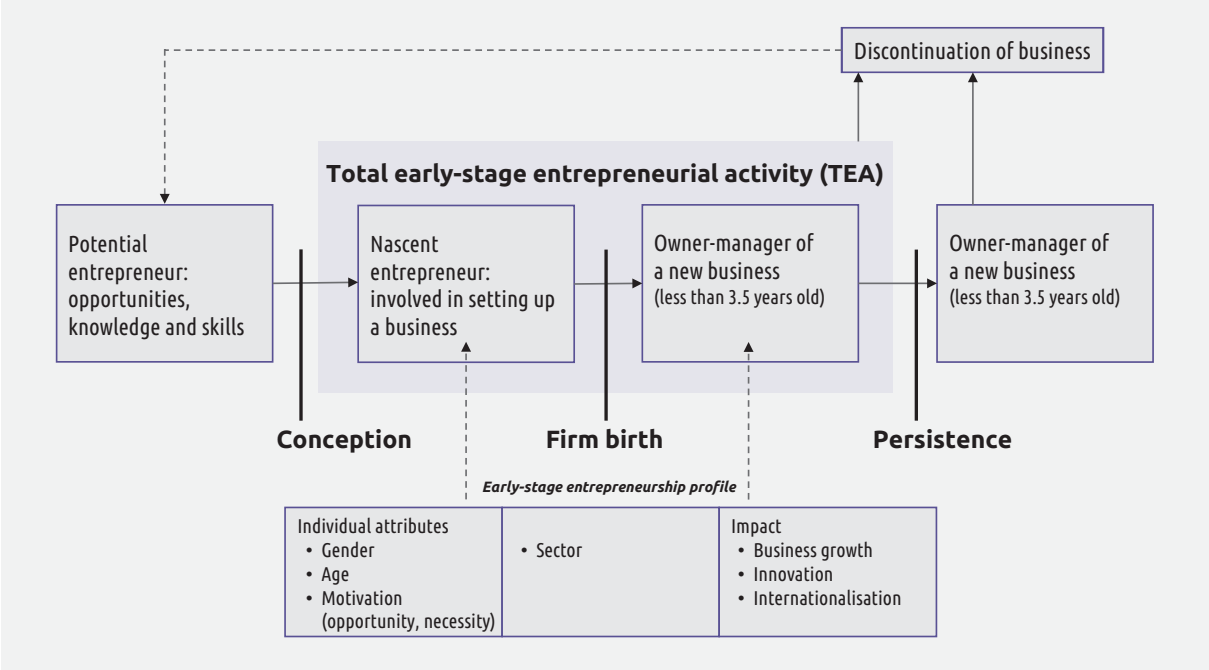
GEM study builds the basis for vertical and horizontal comparison of entrepreneurial activity of a country, by using a unique conceptual research framework and unique indicators. Vertical comparison enables a country to monitor changes in entrepreneurial activity and the quality of entrepreneurial environment over the years, and to analyse the effects of implemented policies and instruments (2002-2017 period for Croatia). Horizontal comparison enables each country to make international comparisons within the same time frame, i.e., selection of an appropriate standard (benchmark).

A short description of the sample and research methodology is given in Appendix 1.

GEM indicators of entrepreneurial activity

GEM monitors the entrepreneurial process and measures different components of that process (from perceptions of social values focused on entrepreneurship, perceptions about opportunities, through entrepreneurial intentions) to emerging and early-stage entrepreneurial ventures (less than 42 months old) and entrepreneurial activities in "established" businesses (more than 42 months old). At the same time, each of the indicators of entrepreneurial activity can be analysed with respect to different characteristics, such as individual attributes, industry sectors and impact on economic development (Figure 3).

Figure 3 Entrepreneurship process and GEM operational definitions



Source: Global Entrepreneurship Monitor 2017/18 Global Report, 2018, p. 22 http://www.gemconsortium.org/report

For the purposes of the GEM study, based on the conceptual framework and study objectives, categories of entrepreneurial activity and a set of indicators that measure different aspects of entrepreneurial activity have been determined (Figure 4 and Figure 5):

Figure 4 Categories of entrepreneurial activity

Entrepreneurial activity of adult population, aged 18 to 64 years	TEA index, in % of adult population		"Established" businesses, in % of adult population	Entrepreneurial employee activity, in % of adult population*
	Nascent entrepreneurs Tries to start own business alone or with others, self-employment	**New entrepreneurs** Owner of a business/craft, which is 3 to 42 months old	**Entrepreneurs** Owner of a business/craft, which is more than 42 months old	**Employees** Employee develops a new product/service for the business he or she works for, in the last three years and is currently involved in such activities
	Entrepreneurs involved in early entrepreneurial activity (TEA from perceived opportunity vs. TEA out of necessity)			

*Focus is on employees who have the leading role in creation and/or implementation of such new business activities, regardless of where such employees are in the organizational structure. This activity does not include optimization of internal business processes.

In order to understand entrepreneurial capacity of a country, it is necessary to recognize the differences that occur with regard to inclusiveness (gender, age), industry sector, and the impact of businesses whose growth is based on creation of new jobs, innovation and internationalisation of business operations.

In accordance with the conceptual framework (Figure 1) and the entrepreneurial process as recognized by the GEM study (Figure 3), the following sets of indicators have been identified:

Figure 5 Definitions of GEM indicators

Societal values and perceptions

Good career choice
The percentage of the population between the ages of 18 and 64 years who believe that entrepreneurship is a good career choice

High status of successful entrepreneurs
The percentage of the population between the ages of 18 and 64 years who believe that high status is afforded to successful entrepreneurs

Media attention for entrepreneurship
The percentage of the population between the ages of 18 and 64 years who believe that there is a lot of positive media attention for entrepreneurship in their country

Individual attributes of a potential entrepreneur

Perceived opportunities
The percentage of the population aged 18-64 years who see good opportunities to start a business in the area where they live

Perceived personal capabilities
The percentage of the population aged 18-64 years who believe that they have the required skills and knowledge to start a business

Entrepreneurial intentions
The percentage of the population aged 18-64 years (individuals involved in any stage of entrepreneurial activity excluded) who intend to start a business within three years

Fear of failure
The percentage of the population aged 18-64 years who indicate that fear of failure prevents them from starting up a business.[6]

This indicator can also be calculated as a percentage of the population aged 18-64 years perceiving good opportunities, but who are prevented from starting a business by fear of failure

Entrepreneurial activity indicators

Total Early-stage Entrepreneurial Activity (TEA)
The percentage of the population aged 18-64 years who are in the process of starting a business (a nascent entrepreneur) or started a business less than 42 months old. This indicator can be observed from the perspective of motivation (opportunity vs. necessity), inclusiveness (gender, age), impact of the business (new jobs, innovation, internationalisation) and industry sectors

Rate of "established" businesses
The percentage of the population aged 18-64 years who are currently an owner of an "established" business, i.e. managing their own business that has paid salaries to employees and the owner for more than 42 months

Business discontinuation rate
The percentage of the population aged 18-64 years (who are either a new entrepreneur or an owner of an "established" business) that have discontinued a business in the past twelve months, either by selling, shutting down or otherwise

Entrepreneurial Employee Activity (EEA)[5]
The percentage of the population aged 18-64 years who, as employees, have been involved in entrepreneurial activities such as developing new goods / services or setting up a new business unit

Social Entrepreneurial Activity (SEA)
The percentage of the population aged 18-64 years who are engaged in early-stage entrepreneurial activity with a social goal

Perception of the quality of the entrepreneurship ecosystem

Average value of experts' scores for the quality of nine components of the entrepreneurship ecosystem, using a Likert scale of 1 (highly insufficient) to 9 (highly sufficient)[4] :

- Access to money
- Government policies toward entrepreneurship
- Government programs for entrepreneurship
- Entrepreneurship education
- R&D transfer
- Commercial and legal infrastructure
- Openness of the domestic market
- Physical infrastructure
- Cultural and social norms

[4] Likert scale of 1 to 9 has been used since 2015 – comparability with previous years when Likert scale of 1 to 5 was used is possible by transposing the values of 1-9 scale to 1-5 scale.

[5] GEM measures entrepreneurial employee activity since 2011.

[6] This definition was used in previous GEM reports for Croatia, and both definitions will be used in this report.

GEM Entrepreneurial Spirit Index (GESI) – new GEM indicator (undergoing testing in 2017 and 2018)

Abundance of indicators allows a variety of perspectives that describe the phenomenon of entrepreneurial activity, as well as connecting these different perspectives into new indicators. Questions which ask respondents to provide a rating of their individual attributes (knowing someone who is entrepreneurially active, recognizing good opportunities for starting a business in their local area, and whether they think they have the skills and knowledge to start a business) enable the creation of the new ENTREPRENEURIAL SPIRIT indicator. The numerical value of this indicator indicates a country's position in relation to other countries participating in the study in a given year (relative distance from the best and worst). ENTREPRENEURIAL SPIRIT provides information on the potential for entrepreneurial activity, which will or will not be realized, depending on personal decision, but also on interaction with the environment. Personal decision depends on the availability of financial resources, on the extent to which regulatory framework stimulates or hampers entrepreneurial activity, on whether there are appropriate institutions for counselling assistance, on cooperation with research institutions, as well as on other components of the entrepreneurship ecosystem[7]. Test results for 2017 are presented in GEM Global Report 2017/18, p. 29-31..

International dimension of the GEM study

In 2017, 54 countries participated in the GEM study, covering 67.8% of the world's population and 86.0% of the world's domestic gross product.[8]

The sources used for grouping countries by geographical and development criteria are United Nations[9] and World Economic Forum (Figure 6).[10]

Figure 6 Countries that participated in GEM study in 2017, grouped by geographical region and level of development

	Economies whose development is based on		
	Basic factors	**Efficiency**	**Innovation**
Africa	Madagascar	Egypt	
		South Africa	
		Morocco	
Asia and Oceania	India	Indonesia	Australia
	Kazakhstan	Iran	Israel
	Vietnam	China	Japan
		Lebanon	Qatar
		Malesia	Republic of Korea
		Saudi Arabia	Taiwan
		Thailand	United Arab Emirates
Latin America and Caribbean		Argentina	Puerto Rico
		Brazil	
		Chile	
		Ecuador	
		Guatemala	
		Jamaica	
		Columbia	
		Mexiko	
		Panama	
		Peru	
		Uruguay	

[7] To calculate this indicator, principal component analysis was used on unweighted data / answers of respondents from a random sample of the adult population aged 18-64 years for 54 countries that have participated in the GEM study in 2017.

[8] GEM 2017/18 Global Report, p. 11, www.gemconsortium.org

[9] World macro-geographical regions http://unstats.un.org/unsd/methods/m49/m49regin.htm

[10] Grouping of countries with regard to development level http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf, p. 319-320

Europe		Bosnia and Herzegovina	Cyprus
		Bulgaria	Estonia
		Croatia	France
		Latvia	Greece
		Poland	Ireland
		Slovakia	Italy
			Luxembourg
			Netherlands
			Germany
			Slovenia
			Spain
			Sweden
			Switzerland
			United Kingdom
North America			Canada
			United States of America

The GEM study uses three stages of development (development based on basic factors, on efficiency, and on innovation), and countries that are in transition phases are grouped with the group which they are "exiting". Thus, Croatia, whose economy is transitioning from efficiency to innovation, is in the group of countries whose economies are efficiency-driven.

About the sample in Croatia

A sample of the adult population is randomly chosen in each country, which must meet the criteria of age, gender and regional affiliation, and a convenience sample of experts (at least 36) based on the criteria of reputation and experience in 9 different areas that determine the entrepreneurial environment in which entrepreneurs operate.

The sample size is at least 2,000 adults aged 18-64 years. Some countries, because of their desire for identification of differences in entrepreneurial activity within the country and more efficacious creation of policies aimed at strengthening entrepreneurial activity, opt for a larger sample (e.g. Austria – 4,500, Germany – 4,450, Poland 8,000, UK – 8,990, Sweden – 5,000, Spain – 23,400).

In Croatia, the sample in all years was 2,000 adult respondents, and thus also in 2017, which means that since the inclusion of Croatia in the GEM study until now (from 2002 to 2017), 32,000 randomly selected people have been involved. Sample selection and surveying of the adult population in Croatia is carried out by IPSOS, in collaboration with the Croatian GEM research team and the global GEM coordination team, using a standardized questionnaire.

In 2017, 42 experts gave their assessment of the quality of components of entrepreneurial environment. Selection and surveying of experts is carried out by the GEM research team and CEPOR. Since the beginning of involvement in the GEM study, i.e. since 2002, 349 experts took part in the survey (in some years, in accordance with the propositions, the same experts that have participated in previous years were able to participate again, bringing the number of expert contributions to 624). Appendix 2 contains a list of experts whose opinions have contributed to monitoring changes in the quality of individual components of entrepreneurial environment in Croatia in 2017 and whose views are incorporated in the preparation of this study.

GEM research team in Croatia

The GEM study is coordinated by the Global Entrepreneurship Research Association (GERA) with headquarters at London Business School (London), and is conducted by national research teams. Coordination team is responsible for the research as a whole, for collecting standardized data from international sources and for producing the global report with a comparison of the level of entrepreneurial activity between participating countries. National research teams conduct interviews with the experts, survey the adult population, analyse collected information and produce national reports. GEM coordination team and national teams are obligated to publicly promote the research results because of their importance for policy interventions in implementing

national economic policy (Singer et al., 2003; Singer et al., 2006; Singer et al., 2007; Singer et al., 2012; Singer et al., 2016; Singer et al., 2017) . All publications on results of previous GEM studies are available for download at www.cepor.hr/gem-global-entrepreneurship-monitor/ .

In 2017, Croatia participated in the GEM study for the sixteenth time. The study is headed by CEPOR – SMEs and Entrepreneurship Policy Center. The research team consists of a group of researchers from the Josip Juraj Strossmayer University of Osijek: Slavica Singer (singer@efos.hr), team leader, and team members: Nataša Šarlija (natasa@efos.hr), Sanja Pfeifer (pfeifer@efos.hr) and Sunčica Oberman Peterka (suncica@efos.hr). Danica Eterović, CEPOR, participates in carrying out surveying and interviewing of experts, while surveying the adult population is carried out by IPSOS, according to the methodology and instruments that are mandatory for all participants in the GEM study. Oto Wilhelm, Faculty of Economics in Osijek, participates in the processing of collected data, preparation of graphs and translation of the report into English.

Appendix 3 contains a list of all national GEM teams and sponsors that have participated in the study in 2017.

Financing the GEM study in Croatia

Since the beginning of Croatia's involvement in the GEM study, participation of Croatia has been co-financed by the Ministry of Entrepreneurship and Crafts / Ministry of Economy, Entrepreneurship and Crafts, the Josip Juraj Strossmayer University of Osijek, Faculty of Economics in Osijek, and CEPOR – SMEs and Entrepreneurship Policy Center. In 2015, Privredna banka Zagreb was the main financial sponsor. In 2016, the Croatian Banking Association was the main financial sponsor of the GEM study and the promotion of the study results through discussions in Zagreb, Rijeka and Split during 2017.

In 2017, the Ministry of Economy, Entrepreneurship and Crafts is the main financial sponsor of the GEM study in Croatia, while Croatian Banking Association and Croatian Employers' Association are the sponsors of media promotion of research results.

2 Entrepreneurial activity of Croatia – opportunities, intentions and ventures, in international perspective

Perception of opportunities is growing, but not intentions to start a business venture

Individual attributes of potential entrepreneurs

Perception of social values

Low dynamism of entrepreneurial structure

New entrepreneurial activity

Share of "established" businesses

Intensity of exit from business activity

Capacity for renewal of entrepreneurial structure

Few growing businesses

Investments in technology, but few new products

"Red ocean" markets still dominate, with strengthening of internationalisation of new businesses

Expectations of new employment – too optimistic?

Entrepreneurial employee activity – hidden component of entrepreneurial capacity of Croatia

The GEM study monitors entrepreneurial activity of different categories of people at the national level (as defined in Figure 4):

- Potential entrepreneurs ("nascent") – those who see an opportunity, believe that they have the ability to start a business venture and intend to do so
- New entrepreneurs – those who have a business venture older than three months but less than 42 months
- „Established" entrepreneurs – those who have a business venture older than 42 months
- Entrepreneurial employee activity

International comparison of entrepreneurial activity of Croatia is observed from two perspectives – the perspective of the European Union and the perspective of the group to which Croatia belongs with regard to the level of development (efficiency-driven economic growth[11]).

Perception of opportunities is growing, but not intentions to start a business venture

The process of entrepreneurial activity begins by recognizing opportunities and forming the intention to start a business venture. Personal preferences, which are the starting point for other phases of the entrepreneurial process and creation of individual entrepreneurial capacity, are conceptualized in the GEM study through interaction of social values and individual attributes of potential entrepreneurs.

[11] This group also includes countries whose economies are in transition between efficiency-driven and innovation-driven development, like Croatia (according to categorization of countries with regard to the level of development used by the World Economic Forum in global competitiveness research)..

Individual attributes of potential entrepreneurs

Individual attributes on which building entrepreneurial capacity of individuals depends are identified in the GEM conceptual framework as:

- Perception of opportunities
- Perception of own skills and knowledge for starting a business venture
- Perception of intentions for starting a business venture
- Fear of failure

Definitions of these indicators are described in Figure 5, Chapter 1.

Information on the perception of opportunities is based on recognizing opportunities in the environment in which the respondents live (Table 2).

Table 2 Perceived opportunities for starting a business venture, in own environment - %

Year	Croatia	EU		Efficiency-driven economies	
		Average/highest	Croatia's rank*	Average	Croatia's rank**
2015	22.3	34.8 70.2 Švedska	18/21	40.9	28/29
2016	24.6	36.7 78.5 Švedska	19/22	42.5	30/32
2017	33.6	42.6 79.5 Švedska	13/18	43.8	22/26

* Croatia's rank out of EU countries involved in the GEM study

** Croatia's rank out of all countries with efficiency-driven economies, involved in the GEM study

The perception of the existence of opportunities for starting a business venture in the immediate surroundings of survey participants is significantly increasing in 2017 both in Croatia and in the average of EU countries that participated in the GEM survey (in Croatia by one-third, in EU by 16% compared to 2016). This may be a sign of returning optimism, but in the international perspective (the EU and the group of efficiency-driven economies) Croatia is still in the last third of countries that participate in the GEM survey, although not at the very rear. The difference in the perception of opportunities determines other components on which entrepreneurial activity depends (such as fear of failure, decision to start a business venture). Despite the increase in the perception of opportunities, the fact that in 2017 only one-third of adult population in Croatia recognizes business opportunities, against 43% in the EU (or more than three-quarters of the adult population in Sweden) speaks about a huge difference in the potential that determines entrepreneurial capacity of a country.

Perception of opportunities provides insight on what respondents see in their environment, while perception of their own capabilities for starting a business venture on what they think about themselves (Table 3).

Table 3 Perceived personal capabilities for starting a business venture - %

Year	Croatia	EU		Efficiency-driven economies	
		Average/highest	Croatia's rank*	Average	Croatia's rank**
2015	47.5	43.1 55.9 Poljska	6/21	52.4	19/29
2016	50.2	43.7 60.2 Poljska	4/22	54.6	19/32
2017	50.8	44.0 53.3 Slovenija	3/18	53.5	14/26

* Croatia's rank out of EU countries involved in the GEM study

** Croatia's rank out of all countries with efficiency-driven economies, involved in the GEM study

According to the perception of own capabilities for starting a business venture indicator, Croatia is above the EU average in all observed years (but below the average of the group of countries to whose developmental level Croatia belongs). It is interesting that the country with the highest level of recognition of business opportunities (Sweden, 79.5% in 2017) also has the lowest rating of the perception of personal capabilities for starting a business venture (34.5% in 2017).

If the perception of personal capabilities for starting a business venture in Croatia is better than the average for EU countries, then a low level of perception of opportunities opens questions about the reality of such self-confidence (especially compared to Sweden). The gap between these two important features on which formation of intent to start a business venture depends requires further investigation of why people do not see opportunities – because they are not there, or they do not know how to recognize them (and this raises the question how the educational system contributes to people's capability to start a business venture, including knowledge and skills for recognizing opportunities).

EXAMPLE 1 OPPORTUNITY RECOGNITION

Ergovita and Ozana Pope Gajić

(www.ergovita.hr)

From a self-employed physiotherapist to a global educator through opportunity recognition

Ozana Pope-Gajić is a Bachelor of Physiotherapy (and a Master of Nursing). After ten years of work and gaining experience at a clinical hospital centre, saturated with work in the public system and the inability to her own ideas, in 2004 Ozana decided to quit and establish Ergovita, her own physiotherapy studio.

First turning point in decision-making - Ergovita begins operations in a small family apartment with traditional physiotherapies and massages, also offering group exercises for spine and pregnant women, for which she rented premises from an acquaintance. Since the exercises were usually held in the evening, Ozana, in pauses between (a small number of) patients, spent the morning hours in searching the internet and seeking ideas to expand the offer.

And thus began the search for a new opportunity. She learned about the Bowen technique from a client (female volleyball player from Zagreb who was undergoing treatment at Ergovita), about which she was both sceptical and curious. As a physiotherapist, Ozana found the Bowen techniques interesting because it is based on manual manipulation of soft tissue at precisely determined locations of the body, resulting in a reduction of musculoskeletal and neurological problems, as well as impacting overall health, in a small number of treatments. Exploring the application of the technique around the world, she came across a webpage of an Australian physiotherapist and Bowen therapist from whom she received feedback on the effectiveness of the technique and found about a school in the United Kingdom owned by Anneke Loode. Sustainable success of the school motivated Ozana's decision to start such a course in Croatia in collaboration with Anneke, to train herself in the Bowen technique and to enable others to do so. She translated courses of Anneka's "The Bowen School for Healthcare Professionals" and organized courses in Osijek and Zagreb, since 2008.

Second turning point in decision-making – At the very beginning of training, convinced of the exceptional quality of Bowen and wanting to provide only the best treatment to her clients, Ozana decided to stop with classical physiotherapy methods and started offering Bowen therapy exclusively. She continued her education and became a licensed Bowen therapist in 2010. Encouraged by the results of her patients, she continued expanding her knowledge and skills at numerous educational workshops (London, Chicago, Ljubljana, Zagreb), created new contacts and coordinated numerous courses for foreign instructors in Croatia at which she also studied. As the most significant personal learning experience, she singles out an intensive workshop with doctor Romney Smeeton from Australia, a direct student of the technique's founder, Thomas Ambrose Bowen. With Anneke she was also introduced to the Emmett technique, completed basic and advanced courses where she learned directly from the technique's founder Ross Emmett, and in 2013 she became the representative of the Emmett technique for Croatia and Slovenia. She started implementing the Emmett technique more intensively, enrolled in training for instructors and in 2016 she became an authorized instructor. She still works with patients in Ergovita, treating them exclusively with a combination of these two techniques, because of many advantages that she achieves with them. In addition to working with patients, Ozana spends most of her time educating and training other physiotherapists in the use of these two techniques in Croatia and America.

With her involvement, she succeeded in Ministry of Health recognizing Bowen as a healthcare technique (in 2014) and in Croatian Council of Physiotherapists recognizing it as continuous physiotherapist training, and she has educated some one hundred health workers through various training activities thus far. Today, Bowen and Emmett techniques are applied in a large number of public and private hospitals and private practices (St. Catherine Specialty Hospital, Arithera, Aviva, Rakovac, Clinical Hospital Dubrava, Clinical Hospital Centre Sisters of Charity Department of Traumatology Zagreb, Bizovačke Toplice Rehabilitation Centre, Clinical Hospital Centre Osijek Pain Clinic, Daruvarske Toplice), many health workers have changed their business careers by learning these methods, and a large number of patients and their families have experienced improvements in quality of life precisely because of their overall impact on health.

Third turning point in decision-making – employ physiotherapists and develop Ergovita through offer of Bowen and Emmett techniques, or something else. Ozana sees the future of Ergovita through "something else". Her vision is to engage in training and education, with independent work with patients, which gives her a confirmation of what she is learning and transferring to others. Although small, Ergovita is growing, given the number of those who, thanks to Ozana, started implementing these techniques, thus enriching their practice and service. Excellence in providing service (both in work with patients and in education) ensures not only survival, but also progress and growth to Ozana.

Curiosity, monitoring what is going on not only in your own profession but also at the intersection of traditional and new approaches enables opportunity recognition. Recognized opportunities require an honest re-examination of capabilities for their implementation, which leads to awareness of the necessity of building own competencies through continuous professional training for new opportunities and readiness to take well-assessed risks. Ozana' professional story confirms this – Ergovita does not grow if criteria of new employment or income are used. But, Ergovita grows through its impact on the profession, and because of that Ergovita is part of the world elite in this field. Ozana's decisions took Ergovita from one among the many to a leader in the field.

Perceptions of opportunities and own capabilities for starting a business venture determine the perception of entrepreneurial intentions. In the 2015-2017 period, adult population in Croatia expresses intention to start a business venture more often than the EU average –Croatia was ranked 1st in 2017 (Table 4), with a decrease in fear of failure in 2017 (Table 5).

Table 4 Perceived entrepreneurial intentions - %

Year	Croatia	EU		Efficiency-driven economies	
		Average/highest	Croatia's rank*	Average	Croatia's rank**
2015	20.9	15.1 31.1 Romania	4/21	27.6	20/29
2016	22.3	14.8 23.5 Poland	2/22	29.8	22/32
2017	22.8	13.8 22.8 Croatia	1/18	30.1	16/26

* Croatia's rank out of EU countries involved in the GEM study

** Croatia's rank out of all countries with efficiency-driven economies, involved in the GEM study

Table 5 Perceived fear of failure - %

Year	Croatia	EU		Efficiency-driven economies	
		Average/lowest	Croatia's rank*	Average	Croatia's rank**
2015	44.7	46.0 37.2 UK	12/21	38.4	22/29
2016	46.0	46.6 35.1 Netherlands	12/22	38.6	27/32
2017	37.1	44.0 32.9 Netherlands	4/18	39.1	13/26

* Croatia's rank out of EU countries involved in the GEM study

** Croatia's rank out of all countries with efficiency-driven economies, involved in the GEM study

Stable level of adult population with intention to start a business venture (above the EU average, in the first place in 2017), and a decrease in fear of failure in Croatia signal an increase in the number of potential entrepreneurs, but also raises the question of motivation for engaging in entrepreneurial activity (because of perceived opportunity or out of necessity). Low level of adult population in Croatia who see opportunities in their environment warns that people decide to start business ventures because of the absence of any other option, i.e. out of necessity.

The lowest level of fear of failure is more often expressed by people in countries with stable economies (such as the Netherlands and the UK), while the highest level is recorded in Greece (64% in 2015, 70% in 2016, 56% in 2017). At the same time, the lowest perception of opportunities for starting a business venture in the environment in which they live was expressed by respondents in Greece (14% in 2015, 13% in 2016, 14% in 2017). The lowest perception of intentions was expressed by respondents in Spain in all there observed years (from 6% to 8%).

Perception of social values

According to the perception of adults of personal entrepreneurial intentions, Croatia is at the top of EU countries that participated in the GEM survey in the observed period (slightly oscillating at the level of just above 20% – Table 4). In the same period, as many as two-thirds of respondents consider that being an entrepreneur is a good career choice (Table 6). Such a combination of intention to start a business venture and perception that being an entrepreneur is a good career choice would be a significant component of building entrepreneurial culture in Croatia, which is annulled by a very low perception that successful entrepreneurs have a high status in society. Below 50% believe that successful entrepreneurs have a high status in society, while in the EU this is at the level of two-thirds of respondents, not only in the 2015-2017 period, but also in previous years. In European perspective, Croatia is in the first third according to the view that being an entrepreneur is a good career choice, but is the last of the EU countries involved in the GEM survey according to attitude about social status of successful entrepreneurs (Table 6), as well as in the group of countries whose economies are efficiency-driven (Table 7).

The media have an enormous influence on social attitude towards successful entrepreneurs. Also here, Croatia is at the rear in both groups (the EU and efficiency-driven economies), which requires a serious analysis of the content of media coverage of entrepreneurial activity in Croatia and the media's responsibility for the development of entrepreneurial culture.

Table 6 Perceived social status of entrepreneurs, in EU perspective[1]- %

Year	Being an entrepreneur is a good career choice		Successful entrepreneurs have a high status in society		Media attention for entrepreneurship	
	Croatia	EU/Rank CRO	Croatia	EU/Rank CRO	Croatia	EU/Rank CRO
2015	61.5	56.1 4/21	42.3	66.4 21/21	47.5	54.1 17/21
2016	62.2	57.4 6/21*	45.6	66.5 21/21*	47.2	54.3 15/21*
2017	62.2	58.6 6/18	47.7	67.0 18/18	48.1	55.6 15/18

[1] Croatia's rank out of EU countries involved in the GEM study

*data for 1 country is not available

Table 7 Perceived social status of entrepreneurs, comparison with the average of countries with efficiency-driven economies[2] - %

Year	Being an entrepreneur is a good career choice		Successful entrepreneurs have a high status in society		Media attention for entrepreneurship	
	Croatia	Efficiency-driven economies - Average/Rank	Croatia	Efficiency-driven economies - Average/Rank	Croatia	Efficiency-driven economies - Average/Rank
2015	61.5	64.1 18/28*	42.3	65.7 27/28*	47.5	62.4 25/28*
2016	62.2	66.9 20/30**	45.6	66.9 30/30**	47.2	61.1 26/30**
2017	62.2	65.7 15/24**	47.7	66.3 23/24**	48.1	60.1 20/24**

[2]Croatia's rank out of all countries with efficiency-driven economies, involved in the GEM study

* data for 1 country is not available

** data for 2 countries is not available

The highest values of these indicators in the EU are in the countries with the most developed economies. Since 2012, the highest number of respondents who believe that being an entrepreneur is a good career choice is in the Netherlands (about 79%), successful entrepreneurs have the highest social status in Finland (about 85%)

and in Ireland (about 82%), while attention for successful entrepreneurs is the highest in Ireland (from 72% to 76% respondents think so), Portugal (about 72%) and Finland (about 68%).

The transformation of individual attributes (perception of personal capacity for recognition of opportunities, of capability for starting a business venture, of intentions and fear of failure) into entrepreneurial activity is carried out under the influence of the system of social values (attitude towards career choice, social status of successful entrepreneurs, media attention for successful entrepreneurs). The complexity of this process is also emphasized by interconnections between these two groups of factors on which entrepreneurial activity at individual level depends. The synergistic effect of these connections is achieved through capacity for entrepreneurial activity, which GEM monitors through starting of business ventures and growth of business ventures. Long-lasting presence of a positive attitude towards entrepreneurial career, which is not accompanied by attitudes about social status, nor by media attention for entrepreneurship, has been endangering capacity for entrepreneurial capacity for years.

Low dynamism of entrepreneurial structure

Dynamics of changes in the economic structure is determined by life cycles of individual business ventures, i.e. the intensity of starting new business ventures, the relationship between growing and non-growing businesses and the survival rate. Survival rate of business ventures at the level of the entire economy is a good indicator of maintaining or distortion of vitality of economic structure – shortening of the survival rate requires intensification of entry into entrepreneurial ventures, because otherwise economic structure will be collapsing and the base will be shrinking. Sustainable vitality of economic structure therefore requires highly harmonized but also differentiated policies for intensification of activities in individual phases of the life cycle of economic structure.

The survival rate decreases with the aging of the business venture – in the EU, one-year survival rate is about 80% (businesses born in 2014 and active in 2015). The highest one-year survival rate was in Sweden (96.7%), and it was above 90% in Greece, the Netherlands, the UK, Croatia and Belgium[12]. Five-year survival rate of businesses born in 2010 and still active in 2015 is generally below 50%. Enterprises in Belgium, Sweden, Luxembourg and the Netherlands have the highest five-year survival rate[13].

Loss of business ventures means a loss of jobs and jeopardizes the creation of new value, which warns of the need for special attention to all the phases of business venture development (from start-up, through "maturing" of business venture, to growth and exit from business activity).

At the same time, it should be emphasized that survival rate does not always mean maintaining or increasing the number of jobs. According to Eurostat data, employment in businesses that have survived for five years was increased only in ten countries (Ireland, Finland, Malta, the Netherlands, Estonia, Luxembourg, Belgium, Latvia and Romania)[14]. In order to maintain employment or even increase it, it is necessary, in addition to survival, to ensure a greater share of growing business ventures.

The dynamics of change of entrepreneurial structure in Croatia, in international perspective, was analysed by using information on the size of contingents of business ventures in individual phases of the life cycle and characteristics of growing business ventures.

New entrepreneurial activity

Ongoing vitality of economic structure requires continuous inflow of new business ventures, in intensity that at least compensates for the loss of business ventures. In addition, new business ventures most often bring new ideas, new technologies, new products, entry to new markets and thus contribute to increasing productivity and competitiveness. Table 8 shows entrepreneurial activity of those who have started a business venture (not older than 3 months) and those who have a business venture older than 3 moths but younger than 42 months, based on which TEA – Total Early-Stage Entrepreneurial Activity indicator of early entrepreneurial activity is calculated as % per 100 adults.

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[12] Source of data on business demography of the EU is http://ec.europa.eu/eurostat/statistics-explained/index.php/Business_demography_statistics April 4, 2018

[13] There is no data on five-year survival rate for Croatia, because Eurostat started monitoring Croatia's business demography in 2012.

[14] http://ec.europa.eu/eurostat/statistics-explained/index.php/Business_demography_statistics#Enterprise_survival_rate April 4, 2018

Table 8 New entrepreneurial activity measured by the TEA index - %

Year	Croatia	EU		Efficiency-driven economies	
		Average/highest	Croatia's rank*	Average	Croatia's rank**
2015	7.7	8.0/14.1 Latvia	10/21	14.5	24/29
2016	8.4	8.6/16.2 Estonia	11/22	14.2	25/32
2017	8.9	8.3/19.4 Estonia	7/18	18.5	20/26

* Croatia's rank out of EU countries involved in the GEM study

** Croatia's rank out of all countries with efficiency-driven economies, involved in the GEM study

The indicator of entrepreneurial activity in the observed 2015-2017 period is increasing. However, in 2017 there were half as many newly started business ventures in Croatia as there were in Estonia, but within the EU average.

The differences in motivation for entrepreneurial activity are measured in the GEM study using the TEA Opportunity indicator – percentage of adult population who have started a business venture because of perceived opportunity and the TEA Necessity indicator – percentage of adult population who have done so out of necessity (e.g. lost their job, do not have another option, etc.). The ratio of these two indicators (TEA Opportunity to TEA Necessity) is called the motivational index in the GEM study. Motivational index above 1 means that there are more of those who have entered entrepreneurial activity of their own will, because they have perceived a business opportunity they want to take advantage of. Motivational index below 1 means that there are more of those who were forced to entrepreneurial activity by the situation, although they did not want that. A higher motivational index is better for the national economy, because it indicates potentially better preparedness for starting a business venture and greater optimism which is based on recognized opportunity. Although the intensity of starting business ventures in Croatia "caught up" with the EU average, the motivational index is significantly lower (Table 9).

Table 9 Reasons for starting entrepreneurial activity – due to perceived opportunity or out of necessity

Year	TEA Opportunity %		TEA Necessity %		Motivational index TEA Opportunity/TEA Necessity		
	Croatia	EU Average/ highest	Croatia	EU Average/ lowest	Croatia		EU Average**
					TEA Opportunity/ TEA Necessity	Rank in the EU*	
2015	4.6	6.0 11.4 Latvia	3.1	1.7 0.7 Sweden	1.5	21/21	4.0
2016	5.6	6.6 12.9 Estonia	2.6	1.7 0.3 Sweden	2.2	20/22	5.3
2017	5.6	6.2 14.7 Estonia	3.1	1.6 0.6 Sweden	1.8	17/18	5.0

* Croatia's rank out of EU countries involved in the GEM study

** EU average for the motivational index is calculated by first calculating the TEA Opportunity/TEA Necessity ratio for each country, and then the average of these indexes for the EU

Oscillation of the motivational index in Croatia in the 2015-2017 period keeps Croatia at the very rear in the EU, but also in the group of countries of the same developmental level. In 2015, Croatia had the LOWEST motivational index among EU countries. The Netherlands had the highest motivational index in 2017 (11.6), which means that in the Netherlands there are 11.6 times more entrepreneurs that enter entrepreneurial activity due to perceived opportunity than out of necessity, while in Croatia this is only 1.8 times more.

Domination of early-stage entrepreneurial activity motivated by necessity in Croatia and therefore long-lasting low motivational index, and comparison primarily with the average of EU countries (Figures 7, 8 and 9) raises questions on how to provide the necessary support to entrepreneurs out of necessity (knowledge, skills, networking, ...) and reduce the risk of their business failure.

Figure 7 Reasons for entry into entrepreneurial activity – due to perceived opportunity, comparison of Croatia with the EU and countries with efficiency-driven economies, 2015-2017

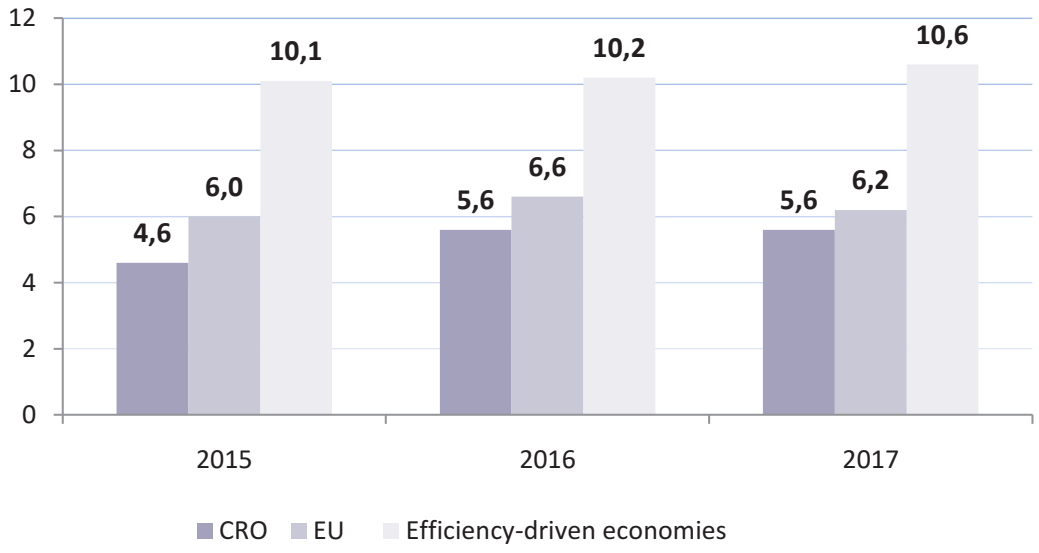


Figure 8 Reasons for entry into entrepreneurial activity – out of necessity, comparison of Croatia with the EU and countries with efficiency-driven economies, 2015-2017

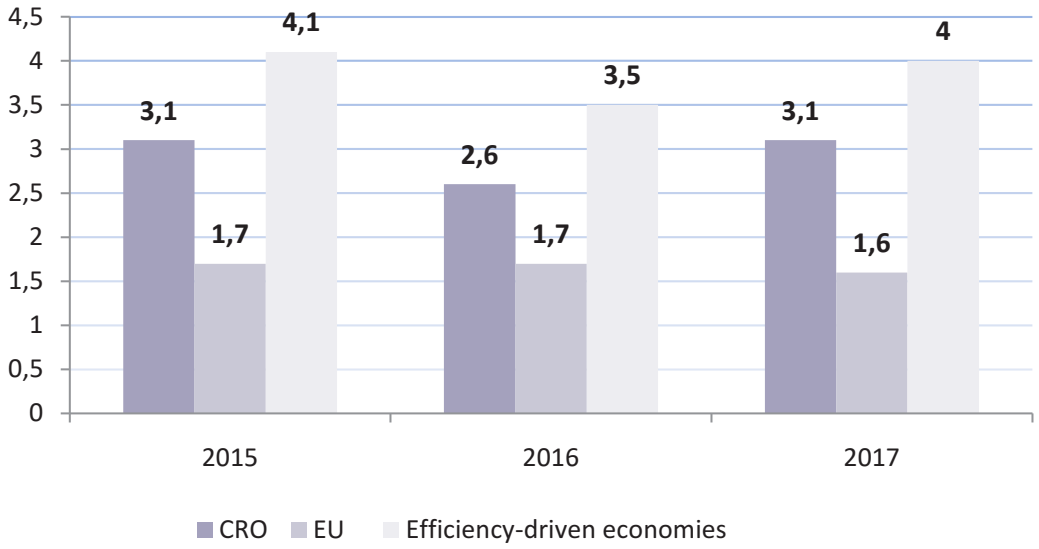
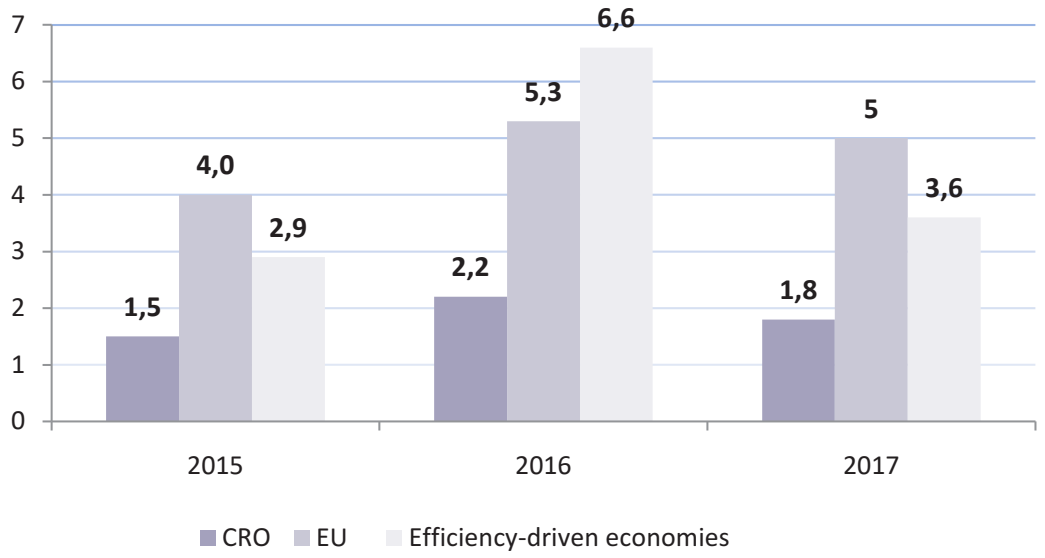


Figure 9 Motivational index for entry into entrepreneurial activity – comparison of Croatia with the EU and countries with efficiency-driven economies, 2015-2017



The index of early-stage entrepreneurial activity in Croatia in 2017 is the same as in 2016 (5.6%), but there is an increase in entry into entrepreneurial activity of those who do so out of necessity (from 2.6% in 2016 to 3.1%). This leads to weakening of the motivational index, which means a reduction of entrepreneurial capacity in this very sensitive early phase of the business life cycle. This also reduces the survival rate, because entry into entrepreneurial activity out of necessity often means a temporary solution, which is reflected in the investment of resources (personal and financial).

A low level of entry into entrepreneurial activity due to perceived opportunity is associated with a low level of perception of opportunities: for example, in 2017, just as in 2016, Bulgaria had the lowest indicator of entrepreneurial activity due to perceived opportunity (TEA Opportunity is 3.7%), and it was in the place before last according to perception of opportunities: only 19.5% of respondents believe that there are opportunities in the environment in which they live.

A possible connection between the strength of the economy and the motivational index can be seen from the indicators of the countries with the highest motivational index: Denmark (16,8 in 2014), Luxembourg (9.3 in 2015), Sweden (19.6 in 2016) and the Netherlands (11.6 in 2017). In addition, high motivational index is also connected with high indicator of perception of opportunities – in 2016, Sweden was in the first place according to this indicator, because as many as 78.5% of respondents see opportunities in the environment in which they live, in 2017 again Sweden with 79.5%.

EXAMPLE 2 CRISIS AS A NEW BEGINNING

POSTIRA
poljoprivredna zadruga
Brač

POSTIRA, agricultural cooperative

www.pzpostira.hr

POSTIRA agricultural cooperative from Postira on the island of Brač was founded in 1947 and is one of the oldest agricultural cooperatives in Dalmatia. POSTIRA is the proof that food production and tourism are complementary, and that "touristification" should not open the door to "giving up on farming". POSTIRA never allowed it – even when it was the most difficult, cooperative members remained faithful to their soil and traditional activities on which they based their survival and future. In the 1970s and 1980s, the inhabitants of Postira produced the most food per capita of all the Adriatic islands: a place with about 1,200 inhabitants annually produced 50-100 tons of olive oil, about 20 wagons of wine, 50 tons of citrus fruits, and several tens of tons of fruit and vegetables, in addition to which the inhabitants owned more than two thousand sheep. Today, Postira's production remains almost at the same level, except for significant stagnation in the production of mandarins and kiwis.

Due to unreasonable reduction of business activities in the 1990s, POSTIRA PZ was faced with serious financial difficulties, which almost led to the closure of the cooperative. In 2015, with great help from local self-government, cooperative members and the new cooperative's manager Ljerka Vlahović, path to a new beginning was created in the form of pre-bankruptcy settlement procedure. "Once on the verge of collapse, today we are liquid, our financial performance is positive, and we can apply for financial support for new development projects," says Ljerka.

The cooperative has 89 (older and younger) members whose diverse age structure makes an excellent team in which experience is upgraded with innovative approach to designing new products and new ways of selling. Restored confidence of cooperative members guarantees the realization of the development vision based on strengthening the brand of Brač oil in cooperation with other oil producers in Brač, expansion of own oil production capacity, protection of oil made in POSTIRA cooperative using traditional methods (pressing) and enrichment of the assortment where POSTIRA would be the holder of production of authentic island food and agritourism.

"In 2017, we processed 1,200 tons of olives (daily processing capacity is 35 tons of olives) and purchased 15,000 litres of olive oil. We sell the products in our souvenir shop, through the web shop, at fairs, directly to restaurants, and in retail chains," says Ljerka Vlahović.

The main product of the POSTIRA cooperative is olive oil from the oblica variety. With the "Croatian Island Product" mark they participate at fairs of island product thus building their recognizability. The cooperative is very active in various activities promoting olive growing and olive oil production. The Oblica Fest Postira is held in April every year since 2009 – the 10th anniversary of this event was celebrated with 94 submitted olive oil samples in 2018. "It is a good opportunity for olive growers to socialize and exchange experiences, we organize lectures that will be useful to them, we hold tastings, and analyse oil at the end. It is all part of efforts not to repeat mistakes in processing from the last year and opportunity for olive growers to develop professionally."

POSTIRA is a co-organizer of the World Championship in Olive Picking, the first of its kind in the world, which was held in Postire olive grove on October 19-22, 2017, and the 2nd World Championship in Olive Picking was announced for October 11-14, 2018.

With a small souvenir shop within the oil mill, and by organizing summer Olive Oil Festival in the courtyard of the oil mill, POSTIRA is also becoming involved in the tourist offer of Brač.

Ljerka Vlahović, who was born on Brač, an economist who returned to Brač after graduating from the University of Split points out that she was raised by agriculture and that she was aware of the problems of POSTIRA agricultural cooperative when she applied for the manager job in 2008. "It was stressful," she says, "perhaps most in dealing with people."

"When, ten years ago, as a 26-yeard old, I accepted the challenge of managing the cooperative, things were not like today. Taking over the cooperative, I found a situation that threatened its complete collapse, but we survived through joint efforts of local self-government, cooperative's members and heads of family farms who are members of our cooperative, and we have a vision of development. What we have today is only a part of what we have envisioned."

"My basic guiding principle was – do not give up before the finish line. It was worth it, because now I finally enjoy what I do – we are all looking forward to a new beginning."

Share of "established" businesses

While the early stage of entrepreneurial activity is determined by the intensity of starting business ventures and motivation (due to opportunity or out of necessity), the "maturing" stage of business ventures depends on the survival rate and growth capacity of business ventures that have been started. "Established" businesses in the GEM study are defined as businesses older than 42 moths. In the 2015-2017 period, Croatia still has an exceptionally "thin" base of "established" businesses and is at the rear of both the EU and efficiency-driven economies (Table 10).

Table 10 Share of "established" businesses - %

Year	Croatia	EU		Efficiency-driven economies	
		Average/highest	Croatia's rank*	Average	Croatia's rank**
2015	2.8	6.5 13.1 Greece	21/21	8.1	26/29
2016	4.2	6.8 14.1 Greece	21/22	8.6	29/32
2017	4.4	7.1 12.4 Greece	14/18	8.9	21/26

* Croatia's rank out of EU countries involved in the GEM study

** Croatia's rank out of all countries with efficiency-driven economies, involved in the GEM study

The difference in density of businesses on 100 adult residents is very informative for the assessment of the economic capacity of Croatia. In the group of EU countries involved in the GEM study, Croatia in 2015 had the least "established" businesses on 100 residents aged 18-64 years, which was only 43% of the EU average (it was so in 2012 as well). In 2016 and 2017, the share of "established" businesses increases and remains at the level of 62% of share of "established" businesses in the European Union.

Compared to the average of countries to whose development group it belongs, Croatia reached 50% of the average of those countries in 2016 and maintains that level in 2017. Such a low level of presence of "established" businesses is a long-term characteristic of the Croatian economy, which continues to warn of a low basis for generation of new value.

Throughout the observed period, Greece has the highest density of "established" business ventures and at the same time the lowest capacity of renewal of entrepreneurial structure observed through the relationship of the number of new and "established" businesses (Table 12). Low efficiency of the Greek economy and these indicators point to a possible conclusion that just starting business ventures and their "maturing" without the capacity of contributing to the creation of new value, with a low ratio of new and "established" business ventures merely ossifies unproductive and uncompetitive entrepreneurial structure.

Intensity of exit from business activity

Termination of business activity is a part of the life cycle of a business venture. The most common reasons are inadequate profitability, desire for change, sale, retirement, inheritance, etc. Table 11 shows the percentage of those who exited business activity in the last 12 months and whose business activity was not resumed, in the group of respondents aged 18-64 years who are entrepreneurs with early-stage entrepreneurial activity or "established" entrepreneurs.

Table 11 Exit from business activity - %*

Year	Croatia		EU		
	%	Rank*	%	Lowest	Highest
2015	1.7	10/21	1.9	1.0 Belgium	3.5 Slovakia
2016	3.4	21/22	2.0	0.8 Italy	3.8 Greece
2017	1.9	9/18	2.1	1.0 Germany	4.7 Greece

* Croatia's rank in the group of EU countries involved in the GEM study, where rank is calculated according to the lowest percentage

Interpretation of the indicator on exit from business activity depends on the context. A low level of termination of entrepreneurial activity can mean that the case is of a well-perceived business opportunity and a well-designed and well-run business venture, or of a status quo which prevents successful "airing" of economic structure. A high percentage of exits from entrepreneurial activity can mean that the case is of a poorly evaluated business opportunity, unpreparedness to run a business venture (insufficient knowledge, lack of a team, money…), but also difficulties in business operations because of limiting influence of the entrepreneurship ecosystem.

In 2016, according to the percentage of business ventures (enterprises) that have ceased to operate in the last 12 months, Croatia was significantly above the EU average, and around the average in 2017. A better understanding of the value of this indicator can be obtained by linking a number of other indicators of entrepreneurial activity. Low level of recognition of opportunities in own environment (Table 2), simultaneously high confidence in capabilities for entrepreneurial activity (Table 3) and high level of expressed intentions to start a business venture (Table 4) are accompanied by very low motivational index (1.8 – Table 9), suggests insufficient preparedness for starting and running a business venture, but it is also possible that the entrepreneurship ecosystem does not recognize the difficulties of those who started a business venture out of necessity and does not provide the necessary services.

Also in 2017, countries with a high motivational index (i.e. the presence of significantly more of those who start a business venture because of perceived opportunity than because they are forced by necessity to do so) often have a lower percentage of exit from business activity. For example, three countries that had the highest motivational index in 2017 have an average rate of exit from business ventures[15], which confirms the claim that own choice and commitment bring very important emotional and expert capital to the business venture and make it stable.

Low motivational index and low intensity of exit from business activity is the worst combination for sustainable vitality of the economy. Large share of entrepreneurial ventures out of necessity brings a greater amount of uncertainty into entrepreneurial capacity of the country due to the lower level of education[16] of those carrying out these activities, which very often leads to business inefficiency. It would be expected that this will be followed by more intensive exit from entrepreneurial activity, but if that does not happen, then the climate of "surviving" of business ventures, which are not contributing either to creation of new value or to new employment begins to dominate. The most common cause of such a situation is in inadequate regulatory solutions of the entrepreneurship ecosystem, which make the exit from business activity difficult[17].

Low motivational index and high intensity of exit from business activity indicate unpreparedness for starting and running a business venture, leading to inefficient use of resources (time, human capital, money) – number of such cases could be reduced with highly specialized adult education programs and counselling services.

Capacity for renewal of entrepreneurial structure

The stability of entrepreneurial structure is determined by its capacity for renewal, which depends on the intensity of creation of new business ventures, their maturing, as well as the speed of exit from business activity if it is a business failure.

The survival rate of business ventures decreases over time – one-year survival rate in the European Union is at the level of 80%, and after five years falls at the level below 50%[18]. Shane (2016) notes that the mortality rate

[15] For example: the Netherlands, with the highest motivational index (11.6) in the group of EU countries that participated in the GEM study, had 2.2% of businesses that ceased to operate, which is slightly above the EU average. Sweden is in the second place according to the motivational index (10.2), and the rate of exit from business activities is 2.1%. Poland, with motivational index of 10.0, has an exit rate that is also at the level of the EU average (2.1).

[16] In 2017, among those who started a business venture due to perceived opportunity in Croatia, there was the least of those with less than secondary education (10.7%) vs. 27.9% of those with such education among those who did so out of necessity. At the same time, among those who started a business venture out of necessity, there was the least of those with post-secondary education (14.8%) vs. 22.3% with such education among entrepreneurs due to perceived opportunity. There were 63% of entrepreneurs due to perceived opportunity with secondary education and 57.4% with the same level of education among entrepreneurs out of necessity.

[17] According to the World Bank's Doing Business 2017 study, to solve the problem of insolvency / exit from business activities it takes 3.1 years in Croatia, 3.5 years in Greece, but in Ireland 0.4 years, Slovenia 0.8 years, Finland 0.9 years, Belgium 0.9 years, the Netherlands 1.1 years, and in Germany 1.2 years. http://www.doingbusiness.org/data/exploretopics/resolving-insolvency April 15, 2018

[18] Similar survival rates are recorded in the US: about half of started business ventures survive, and one-third for 10 and more years, Small Business Administration, 2018.

of American companies has been reduced by 30% since 1977 mainly due to better preparedness of business ventures during start-up, as well as better training of entrepreneurs for managing a business venture.

Renewal of entrepreneurial structure should ensure a stable base of "established" businesses, but also within that category of businesses their continuous innovation should be ensured. This is particularly important for countries such as Croatia, where reduction of the still high unemployment (11%, end of 2017) is only possible through strengthening of the economy. New employment does not occur in all businesses that survive five or more years, if the life cycle is not refreshed by innovative interventions that increase competitiveness.

GEM indicators on early-stage (younger than 42 months) entrepreneurial activity and presence of "established" entrepreneurial ventures (older than 42 months) allow determining the ratios with which the capacity for renewal of economic structure can be assessed (Table 12).

Table 12 Capacity for renewal of "established" businesses – TEA/"established" businesses

Year	TEA/"established" businesses		
	Croatia	Highest in EU	Lowest in EU
2015	2.7	3.1 Luxembourg	0.5 Greece
2016	2.0	2.9 Luxembourg	0.4 Greece
2017	2.0	2.8 Luxembourg	0.4 Greece

There is no universally defined "best" relationship between new and "established" businesses, because low coefficient of renewal of businesses in Greece obviously does not contribute to sustainable vitality of the economy, but can be the result of a large number of "established" ventures (as shown in Table 10) and a low level of starting new business ventures (TEA 4.8%, among the lowest of EU countries that participated in the GEM study in 2017), where it is not known whether a large number of "established" businesses is a reflection of their quality or difficulties in closing business ventures.

The best relationship between new and "established" businesses is one that enables sustainable vitality of entrepreneurial structure, but it is necessary to have insight into quality of business ventures to make such an assessment. From the GEM study, the quality of new business ventures can be assumed through the motivational index, and the quality of "established" business ventures through their growth potential.

Low motivational index in Croatia (Table 9), which indicates a significant presence of people who are entrepreneurially active out of necessity, also determines the ability to run a business venture through the process of transformation of new business ventures into "established" businesses (older than 42 months). Insufficient preparedness for this process can mean that relatively high early-stage entrepreneurial activity is rapidly extinguished. Also in 2017, this is confirmed by the revised value of the capacity for renewal of "established" businesses indicator, calculated using the motivational index (TEA Opportunity / TEA Necessity) instead of the number of newly started business ventures. By putting the motivational index in relation with the indicator of the number of "established" businesses, the indicator of renewal of entrepreneurial structure changes: in Croatia this rate falls from 2.0 to 0.4, and in Luxembourg from 2.8 to 1.8. This still indicates a dangerously low level of renewal of economic structure in Croatia, which is reflected in the competitiveness of the economy.

Few growing businesses

The growth of a business venture depends mostly on the extent to which the products / services of such a venture satisfy some unmet needs of a sufficient number of customers, but primarily on the will of the owner. In addition to these two basic backbones of growth, there must exist a series of interconnected resources (human, social and financial capital) and conditions that stimulate or limit the growth of a business venture (entrepreneurship ecosystem: regulatory framework, education cooperation between the business and research sector, availability of professional infrastructure, physical infrastructure, market openness...).

Due to the complexity of these interactions (market, will of the owner, entrepreneurship ecosystem), growth of business ventures is of varying intensity. Fast-growing businesses[19] are a rare, but an extremely important dimension of the economy of each country, because they are the drivers of competitiveness and generation of new employment. Analysis of the EU business demography for 2015 shows a slight increase of the share of fast-growing businesses in the total number of active businesses with at least 10 employees (from about 145,000 businesses or 9.2% of active businesses in 2014, to 158,000 businesses or 9.9% of all active businesses). Increased share of fast-growing businesses has also led to an increase in the number of employees in such businesses from 12.2 million to 13.6 million. Existence of significant differences between EU members continues in 2105: from 15% of such businesses in Ireland, slightly over 12% in Malta, Hungary and Slovakia, to less than 3% in Romania and Cyprus. The share of fast-growing businesses in the Croatian structure of active businesses was increased to 11.7% in 2015 (from 10.6% in 2016), that is, there were 1,459 businesses with 103,955 employees (in 2016 there were 1,275 businesses which had 79,777 employees)[20].

Because of such importance of fast-growing businesses, since 2006 GEM also monitors this segment of business ventures, using the following criteria to assess whether a business is fast-growing:

- Innovation in the use of new technologies (latest technologies – up to 1 year old, technologies from 1 to 5 years old, without new technologies)
- Innovation in the development of new products (products are new to everyone, to some, to no one)
- Exposure to competition (same product is offered by everyone, by some, by no one)
- Expectation of new employment over the next 5 years (more than 20 employees, 6-19, 1-5, none)

Investments in technology, but few new products

In 2017, Croatia has significantly more businesses (both new and "established") that invest in the latest technologies than the average of EU countries and countries with efficiency-driven economies (Table 13 and Table 14), but at the same time lags behind in the share of businesses whose products are novelty to all customers (Tables 15 and 16). This raises questions about the effectiveness of investment in technology, as well as the level of innovation within businesses, and thus competitiveness.

Table 13 Use of new technologies – for TEA entrepreneurs* (How many entrepreneurs use new technologies?) - %

Year	Croatia			EU		Efficiency-driven economies – latest technologies
	Latest technologies	New technologies (1-5 years)	Without new technologies	Latest technologies	Country with the highest share of businesses with the latest technology	
2015	32.8	33.9	33.3	13.9	32.8 Croatia	20.0
2016	27.3	33.2	39.5	14.5	28.7 Slovenia	19.4
2017	22.0	34.5	43.5	15.6	34.9 Cyprus	19.9

* with business ventures younger than 42 months (new ventures)

[19] The European Union uses the OECD definition, which states that fast-growing businesses are those with annual growth higher than 20% over a 3-year period (where growth can be measured using the number of employees or turnover), that is, if a business has annual employee growth rate of 10% or more over a 3-year period (with 10 employees at the beginning of the period).
http://ec.europa.eu/eurostat/statistics-explained/index.php/Business_demography_statistics April 20, 2018

[20] http://ec.europa.eu/eurostat/statistics-explained/index.php/Business_demography_statistics April 20, 2018

Table 14 Use of new technologies – for "established" entrepreneurs* (How many entrepreneurs use new technologies?) - %

Year	Croatia			EU		Efficiency-driven economies – latest technologies
	Latest technologies	New technologies (1-5 years)	Without new technologies	Latest technologies	Country with the highest share of businesses with the latest technology	
2015	27.4	23.8	48.8	5.2	27.4 Croatia	8.7
2016	28.0	19.2	52.8	5.1	28.0 Croatia	8.8
2017	24.1	26.4	49.5	7.5	24.1 Croatia	8.6

* with business ventures older than 42 months

In the category of early-stage business ventures there is a trend of growth of those that have technologies older than 5 years and a significant drop of those that have the latest technologies. The share of early-stage and "established" businesses in the category of those that use the latest technologies is equal. It is important to observe that Croatia is the country with the highest share of "established" businesses with the latest technologies in the European Union in all three observed years.

Although businesses in Croatia are better equipped technologically than those in the EU and the comparable group of countries whose economies are efficiency-driven, Croatia is lagging behind in innovativeness of products (Table 15 and Table 16).

Table 15 Newness of product for customers – TEA entrepreneurs* (For how many customers is the product new?) - %

Year	Croatia			EU		Efficiency-driven economies – product new to everyone
	New to everyone	New to some	New to no one	New to everyone	Country with the highest share of businesses whose products are new to everyone	
2015	8.8	19.4	71.8	14.4	29.5 Italy	14.9
2016	10.9	17.2	71.9	13.9	30.6 Italy	17.1
2017	14.2	14.1	71.7	15.1	33.5 France	13.3

* with business ventures younger than 42 months (new ventures)

Table 16 Newness of product for customers – "established" entrepreneurs* (For how many customers is the product new?) - %

Year	Croatia			EU		Efficiency-driven economies – product new to everyone
	New to everyone	New to some	New to no one	New to everyone	Country with the highest share of businesses whose products are new to everyone	
2015	11.1	13.9	75.0	9.6	25.0 Italy	12.3
2016	9.6	14.6	75.8	7.9	19.6 Ireland	13.6
2017	6.4	12.4	81.2	9.8	25.2 Italy	12.5

* with business ventures older than 42 months

In the 2015-2017 period, about 70% of TEA entrepreneurs and more than 75% of "established" businesses in Croatia have products that are not new to anyone. TEA entrepreneurs are showing an increase in the share of new products, but the share of those who have a product that is new to everyone in the group of "established" businesses is decreasing. In all the observed years, Italy is the country with the highest share of businesses whose products are new to everyone. For example, in 2017 in Croatia there were almost four times less such "established" businesses than in Italy (6.4% vs. 25.2%), and there were almost 2.5 times less such TEA companies than in France (14,2% vs. 33,5%). The longevity of such structures is a very worrying indicator, because competitiveness is not achieved through technological equipment, but through innovative products.

EXAMPLE 3 GROWTH BASED ON OWN KNOWLEDGE AND FOREIGN INVESTMENT

L&P Tehnologije LLC (LPT), Prelog

L&P Tehnologije LLC, or abbreviated LPT, was founded in 2000 as a daughter company of the American multinational corporation Leggett & Platt, headquartered in Carthage, Missouri, United States. LPT is a part of the company's European division Leggett & Platt Components Europe. It operates in Prelog, at Hrupine 4, to which production has been moved in 2008. It was also the first greenfield investment of the parent company outside the US (after Leggett bought Spühl GmbH in Switzerland in 1997).

The company is divided into two main business segments: manufacture of wire and spring cores for mattresses, and manufacture of machinery, equipment and parts for machinery for manufacture of spring cores, with a strong research and development department. In the spring core program, LPT today has the status of the largest Croatian, but also regional manufacturer of various types of spring cores for mattresses and furniture.

LPT employs more than 500 employees, 400 of which work in the manufacture of spring cores, and 100 in the manufacture of machinery. In 2018, total annual revenue of over half a billion kuna is expected, which is achieved through 95% of sales in international markets, primarily Europe. Over the years, LPT has received several awards for the best exporter. After the fourth extension of the existing spring core manufacturing plant and the construction of a new wire manufacturing plant, LPT will in 2018 have 38,000 m2 production, warehousing and administrative space, which will enable new employment of at least 60 workers.

In 18 years of existence, LPT has invested over half a billion kuna in land, buildings, machinery and equipment.

The company's growth is based on innovation, product differentiation and continuous employee training. Such an approach is deeply ingrained in the organizational culture and structure of the company. Strong research and development team with 15 highly qualified and experienced experts in the fields of mechanical engineering and electrical engineering is currently working on several international projects within the company's core business. Many years of continuous and significant investments in research and development have not been in vain, so today, LPT, its employees and associates are the authors of several patents that are protected all over the world.

Through scholarships, training and various courses, LPT continuously invests in its personnel and their education, consciously building high personal competence of employees for innovative and operational performance, thereby building the trust of their partners and customers in the high quality of LPT products.

Since the very beginning, i.e. since 2000, the company's executives are Davor Gečić, chairman of the board, and Kristijan Babić, company's procurator.

How did it all begin?

In 1997, the then company HESPO LLC from Prelog, as part of the project task of its own research and development team, decided to design a CNC machine for the production of pocket springs with the possibility of using 4 wires, enabling production of multi-zone anatomical mattress cores, as something new in the world of mattresses. After the successful realization of the project, the machine was patented.

At the other end of the world, Leggett & Platt, a multinational corporation from the US, specializing in the production of mattress cores, began with strong acquisitions in global markets. The American company was very interested in HESPO's technology for the production of spring cores with the possibility of zoning, i.e. the use of various zones of pocket springs in the same core, as something new and innovative in the world. After the first contact in 1999, which was mediated by Canadian entrepreneur Milan Badovinac, Croatian emigrant, whose company was bought by Leggett. Tom Wells, Paul Archer and Melanie Caddick before Leggett, and Davor Gecić and a local team before the Hespo / Heplast group are key people who conducted due diligence and negotiations about the purchase of specific production segments from the Hespo / Heplast group.

Due diligence of the company and negotiations lasted from November 1999 to November 2000, when LPT began to operate. At that moment 140 employees of the Hespo / Heplast moved to LPT LCC, and the company organizes its activities in rented premises at the location of HESPO LLC.

In 2006, since production was increasing, LPT decided to invest in its own plant in Prelog – they purchased land in the Business Zone North and started with the construction of the plant. Two years later (in 2008) LPT moved its production to the current location, Hrupine 4, Prelog, and has been continuously increasing its production capacities since.

LPT has a continuous growth in total revenue – HRK 370 million in 2016, HRK 450 million in 2017, and the expected total revenue in 2018 is over half a billion kuna.

"Red ocean" markets still dominate, with strengthening of internationalisation of new businesses

The paradox of relatively good technological equipment and the lack of new products limits the possibility of entering markets with less competition, i.e. the "blue ocean" markets. If 72% of new and 81% of "established" businesses have products that are new to no one (Tables 15 and 16), then this inevitably leads to "shoving" of Croatian businesses in "red" ocean markets in which many offer the same products (Tables 17 and 18). This has been visible for years in both categories of businesses – new and "established". New businesses needed 10 years to, from the ratio of 50 : 50 in 2002 (50% businesses in a market with many suppliers and 50% of businesses in markets in which the same product is offered by fewer companies or no one), to achieve the ratio of 40% : 60% in 2011 (Singer et al., 2012, p. 34). However, in 2017, this ratio deteriorated and returned to the level from 2002.

In "established" businesses, the tendency to increase product competitiveness (% of businesses in a market with many suppliers vs. % of businesses in markets in which the same product is offered by fewer businesses or no one) is visible in the 2002-2011 period (from 78 : 22% in 2002 to 59 : 41% in 2011) (Singer et al., 2012, p. 34). This process continued in the 2012-2014 period, when the ratio of 40 : 60% was achieved (Singer et al., 2016, p. 33), but it worsened again in the 2015-2017 period, to the level of 51 : 49%. However, in this category of businesses there are abrupt changes in the share of businesses in markets with low competition – this is difficult to explain, because the number of businesses with products that are new to everyone is falling (Table 16), and it will be important to monitor changes in the coming years.

Table 17 Intensity of expected competition – TEA entrepreneurs* (How many entrepreneurs offer the same product?) - %

Year	Croatia			EU		Efficiency-driven economies – no one offers
	Manny offer	Some offer	No one offers	No one offers	Country with the highest share of businesses that do not have competition	
2015	50.2	42.5	7.3	8.3	24.3 Ireland	8.3
2016	44.5	47.5	8.0	9.5	19.3 Ireland	8.8
2107.	51.1	40.6	8.3	9.6	18.1 Ireland	7.2

* with business ventures younger than 42 months (new ventures)

Table 18 Intensity of expected competition – "established" entrepreneurs* (How many entrepreneurs offer the same product?) - %

Year	Croatia			EU		Efficiency-driven economies – no one offers
	Manny offer	Some offer	No one offers	No one offers	Country with the highest share of businesses that do not have competition	
2015	59.3	29.3	11.5	4.7	11.5 Croatia	5.5
2016	59.5	35.6	4.9	4.4	12.3 Hungary	5.7
2017	50.9	31.3	17.9	5.6	17.9 Croatia	5.2

* with business ventures older than 42 months

Although Croatia is "convicted" to enter international markets (due to the small domestic market), growth of both categories of businesses (new and "established") without customers from outside the country only confirms that the lack of products that are new to customers closes the doors of foreign markets and pushes businesses to "red" ocean markets.

The internationalisation of the Croatian economy is a necessity, but the success of this process depends on the innovation of the product portfolio of both new and "established" businesses (Table 19 and Table 20).

Table 19 Intensity of expected internationalisation (How many customers are from outside the country?) – TEA entrepreneurs* - %

Year	Croatia				EU		Efficiency-driven economies – countries with export 76-100%
	No customers from outside the country	1-25%	26-75%	76-100%	76-100%	Country with the highest share of businesses that export 76-100%	
2015	9.9	52.5	23.7	13.9	7.4	17.0 Slovenia	3.7
2016	16.5	45.0	24.2	14.3	9.1	19.6 Greece	5.1
2017	19.1	29.5	33.4	18.0	9.4	24.5 Slovenia	4.6

* with business ventures younger than 42 months (new ventures)

Table 20 Intensity of expected internationalisation (How many customers are from outside the country?) – "established" entrepreneurs* - %

Year	Croatia				EU		Efficiency-driven economies – countries with export 76-100%
	No customers from outside the country	1-25%	26-75%	76-100%	76-100%	Country with the highest share of businesses that export 76-100%	
2015	12.6	44.1	35.0	8.4	6.8	14.9 Luxembourg	3.7
2016	14.4	48.8	22.4	14.5	7.0	14.5 Croatia	6.8
2017	18.0	41.6	28.8	11.6	6.1	13.1 Luxembourg	3.9

* with business ventures older than 42 months

Changes in the structure of internationalisation (internationalisation – more than 25% of customers from outside the country vs. low internationalisation – without customers from outside the country + less than 25% of customers from outside the country) in the 2015-2017 period point to different trends in the categories of new and "established" businesses:

- New businesses (TEA) have increased their internationalisation from 38% (internationalisation) vs. 62% (low internationalisation) in 2015 to 51% (internationalisation) vs. 49% (low internationalisation) in 2017 (Table 19),
- "Established" businesses have largely maintained their level of internationalisation at the ratio of 40% (internationalisation) vs. 60% (low internationalisation) in 2017 with an increase in the number of businesses that do not have customers outside Croatia (Table 20).

EXAMPLE 4 FROM "RED" TO "BLUE" OCEAN THROUGH KNOWLEDGE AND INNOVATION

MONO

www.mono.hr

MONO LLC is a software company from Osijek. Established in 2003, the company initially had 4 employees, which increased to 59 experts by the beginning of 2018.

The founders of the company are Jasmin Muharemović, Žarko Gajić and Denis Sušac. Working together in the previous company, they observed that the market was saturated with business applications, which were then being produced by everyone in the local environment (they were swimming in the "red" ocean, many competitors with the same / similar products), as well as no possibilities for professional development and advancement. The "blue" ocean was appearing through the enormous potential of the web application market. It was a time (2003) when the application of the Internet for business purposes was just beginning, and some of today's large segments (social networks, mobile applications) were practically non-existent. After several successful projects, they realized that they remained in the "red" ocean for too long, not looking for new opportunities beyond the well-established product portfolio.

Entering the "blue" ocean demanded new products, and new products required new knowledge.

Today they work on projects involving advanced technologies, such as machine learning and data science. More effort is invested in the development of their own products and services, than in usual outsourcing of software development services.

With such business strategy, MONO profiled itself as a company whose development is based on knowledge. The result is a number of new products with which MONO internationalised its operations. The eCTD Office software suite is used by a large number of pharmaceutical companies of all sizes to manage regulatory documentation, primarily in the process of registering new drugs in human and veterinary medicine with national regulatory agencies. The protocols and standards for this purpose in the pharmaceutical industry can be very complex, and these tools enable substantial savings of time and money. The largest number of users of this software package come from the EU, the US, Switzerland, Canada, Australia, Saudi Arabia, Thailand and South Africa.

MONO also has other products, such as software for the development of complex software applications (Baasic), recording and organization of working hours (Clokke) and automatization of work in recruitment industry operations (Peoplecamp).

The idea for eCTD Office came about, just like some later ideas, through collaboration on smaller projects on which we, essentially, prove our quality and capabilities. It is not easy to get into highly regulated niches like medicine, banking, pharmacy, etc., – or rather, it is impossible without cooperation with experts in these fields, people who have great experience and network of contacts. "We have met partners from Belgium who have spent their entire working lives in pharmacy, and in contact with them we have recognized the potential for a new solution. When told like this, it all sounds very simple, but includes a lot of elements – from creating initial trust, to our understanding of the needs of the industry, to the technical implementation itself, and sales and support – if any of this does not work, the entire thing falls apart."

In addition to the pharmaceutical industry, MONO does business the most with actors in the healthcare sector (several dozen American hospitals use MONO software products for collection of claims and organization of the work of anaesthesiologists), in banking (a large number of banks and credit unions in the US), in the construction industry (cost management, plan and analysis, and supervision in the US and Australia), real estate sales (US), etc. To the question, and what about our country?, Denis answers: "In Croatia, after several attempts of entry with the product for collection of claims and organization of the work of anaesthesiologists, we have not even tried to enter the medical system. In our experience, it is completely closed to smaller firms like ours."

MONO's growth is based on continuous learning and persistent work, which enables them to work on ever-larger and more serious projects. "The quality of software products attracts new customer partners and it has brought us more work than all the marketing channels combined," says Denis Sušac. MONO has developed a structured education program that begins even before employment and continues through the working lives of people in the company.

MONO is also recognized by investing significant efforts in cooperation with educational institutions, as well as for its involvement in the development of the professional community in Osijek and the region, especially through the "Osijek Software City" association, of which they are co-founders and members of the Board. "We truly believe that we can become a serious regional IT centre, but at the same time we are aware of how far we are from that goal."

"The biggest problems and obstacles that we face are related to legislation and the speed – or rather, non-existence – of reforms that would allow us to become more competitive in the global market, primarily in terms of tax policy and cost of labour, and general over-regulation. At the local level, we are even experiencing problems with basic business infrastructure. Both as a company and as the "Osijek Software City" association, we are receiving declarative support from everyone, but real progress is very small and very slow. For example, even with the utmost effort, for 3 years we have not been able to reach even the phase of acquisition of land for the construction of an IT park, because of which we have lost potential funding from EU funds. The worst thing is, that as a consequence of such relationship, an atmosphere of pessimism and defeatism has taken root – because "nothing can be done here" and "people need to leave the country as fast as possible". It is on us to prove that this is not true with our work and results, no matter how much it looked like fighting windmills," says Denis Sušac.

These are the words spoken by the co-owner of the company which is the three-time winner of the Zlatna kuna award of the Croatian Chamber of Economy, County Chamber Osijek, as the best small company in the region (2012, 2015, 2016), which was in included in Deloitte Technology Fast 50 in Central Europe 2013, a prestigious program giving recognition to the fastest growing technology companies from central Europe according to the rate of growth over a five-year period. Besides, MONO was the Croatian representative in the organic growth category for The European Business Awards 2014/2015.

When we come to the stage when owners of companies such as MONO say that their plans and initiatives have been implemented with the support of a stimulating entrepreneurship ecosystem, because, for example, companies can use vouchers for cooperation with research institutions, or administrative procedures in state and public administration do not spend entrepreneurs' time and money disproportionately to the value of the received service, or that educational system educates people with competencies needed by such companies, than Denis's last sentence will not be needed.

And why should it be needed? It is time to stop talking about good examples despite the restrictive effect of the entrepreneurship ecosystem and start talking about good examples with a stimulating entrepreneurship ecosystem.

Expectations of new employment – too optimistic?

In addition to the criteria of technological equipment, innovativeness of products, exposure to competition and internationalisation, the GEM study defines businesses with potential for intensive growth as those that expect to increase employment over the five-year period for at least 50%, provided that it also means at least 10 employees at the end of the period. Very intensive growth means employment of 20 and more employees over the five-year period (these data are available only for new (TEA) ventures, not for "established" businesses) (Table 21 and Table 22).

Table 21 Expected intensity of growth (New employment over the next 5 years?) – TEA entrepreneurs* - %

Year	5+ of new employment			10+ of new employment, with 50% increase of initial employment		
	Croatia	EU	Average for countries with efficiency-driven economies	Croatia	EU	Average for countries with efficiency-driven economies
2015	34.4	25.1	25.1	23.8	16.2	15.1
2016	33.8	25.8	23.3	25.9	17.4	14.7
2017	33.6	21.8	22.5	19.0	14.3	13.6

* with business ventures younger than 42 months (new ventures)

Expectation of new employment is higher for the category 5+ employment over the next five years than for employment of 10+ employees in Croatia, the EU, and countries with efficiency-driven economies. Entrepreneurs in Croatia are significantly more optimistic regarding employment compared to countries participating in the GEM study both in the European Union and in the group of countries with efficiency-driven economies. It is difficult to find justification for such optimism, especially given the low ranking of Croatia in terms of innovativeness of products and greater exposure to competition due to the lack of more innovative products.

Croatia's optimism regarding employment in all the observed years places Croatia in high positions (e.g. in 2017, Croatia was ranked 6th out of 18 EU countries that participated in the GEM study in the assessment of new employment of 10+ employees over the next 5 years). In 2017, Croatia had the highest expectation in the 5+ category (with 33.6%, it was ranked 1st out of EU countries). At the same time, Croatia has a high share of entrepreneurs who expect to employ 1-5 employees over the next five years (37.6% in 2017, but there is a trend of decline in this category: 42.2% in 2015, 38.7% in 2016).

Although the GEM study monitors the category of expectation of 20+ of new employment over the 5-year period, figures show that this is difficult to achieve, because these expectations are at a level of about 1% (virtually no differences exist between Croatia and the comparable groups). The lowest expectations were recorded in Bulgaria, Greece and Cyprus (at the level of about 0.1%), and the highest in Latvia, Ireland and Estonia (at the level of 2%) in the 2015-2017 period.

"Established" entrepreneurs are significantly more cautious in predicting new employment (Table 22).

Table 22 Expected intensity of growth (New employment over the next 5 years?) – "established" entrepreneurs* - %

Year	10+, with 50% increase of initial employment		
	Croatia	EU	Average for countries with efficiency-driven economies
2015	9.3	4.3	5.8
2016	6.5	4.0	5.8
2017	11.0	4.0	5.3

* with business ventures older than 42 months

An exceptional jump in expectation of 10+ new employees over the next 5 years, with 50% increase of initial employment in the category of "established" entrepreneurs in 2017 significantly deviates from expectations

in comparable groups and according to this Croatia is in the 1st place in the group of EU countries. In 2015, Romania was in the 1st place (12%), and in 2016 Ireland (9.5%). In these countries, unemployment is also low, at about 6% (Ireland) and 4.6% (Romania).[21]

The high level of unemployment in Croatia (about 11% in 2017) in any case requires optimism, but above-average optimism among both new and "established" entrepreneurs has no confirmation in other indicators of entrepreneurial activity (low motivational index, low competitiveness).

Entrepreneurial employee activity – hidden component of entrepreneurial capacity of Croatia

The GEM conceptual framework defines entrepreneurial capacity of a country as the totality of entrepreneurial activity in the business venture start-up phase (early-stage or new entrepreneurial activity), in the development of ventures (older than 42 months) and entrepreneurial employee activity.[22]

Entrepreneurially active employees are defined as those who have developed a new product or a service or who have launched a new business unit for their employer. There is a broad and a narrow definition: the broad definition relates to these activities in the last three years, while the narrow definition relates to activities in the last 12 months. Definition of entrepreneurial employee activity excludes employees' initiatives that are focused on optimizations of internal work processes (Table 23).

Table 23 Entrepreneurial employee activity - %

Year	Croatia	EU		Gospodarstva temeljena na efikasnosti	
		Average/highest	Croatia's rank*	Average	Croatia's rank**
2015	9.7	7.0 12.0 UK	3/21	4.0	2/29
2016	10.4	7.1 10.9 Austria	3/22	4.5	3/32
2017	9.2	7.0 12.8 Estonia	6/18	3.7	1/26

* Croatia's rank out of EU countries involved in the GEM study

** Croatia's rank out of all countries with efficiency-driven economies, involved in the GEM study

In all the observed years, Croatia has an above-average entrepreneurial employee activity in relation to EU countries and countries to whose developmental stage it belongs (it is even above the average of countries with innovation-driven economies: 8.2% in 2015 and 77% in 2016, 7.7% in 2017). In 2017, according to the entrepreneurial employee activity indicator Croatia was ranked 6th out of 18 EU countries that participated in the GEM study.

Of the top six countries in 2017, Croatia is the only country whose economy is efficiency-driven. The ranking of countries with the highest level of entrepreneurial employee activity in the EU is:

1. Estonia 12.8%
2. Luxembourg 11.2%
3. United Kingdom 11.0%
4. Slovenia 9.9%
5. The Netherlands 9.7%
6. Croatia 9.2%

[21] https://www.statista.com/statistics/268830/unemployment-rate-in-eu-countries/ April 25, 2018

[22] Data on entrepreneurial employee activity has been collected since the beginning of the GEM study, but only since 2011 is the collected information on the level of this activity presented through the entrepreneurial employee activity indicator (Bosma, Wennekers and Amoros, 2012). The authors identify entrepreneurial employee activity through two phases: idea development phase (active information seeking, brainstorming and submitting proposal for new activity to the management of the company) and new activity preparation / implementation phase (promoting the idea for the new activity, preparation of business plan, marketing, search for financial resources and team building).

The country with the lowest rate of entrepreneurial employee activity from the group of EU countries is Bulgaria (0.74% in 2017, 1.33% in 2016 and 0.53 in 2015).

The most developed countries (whose economies are innovation-driven), which foster a business culture inclined to innovation activity, have the best results in entrepreneurial employee activity (in 2017, those were Taiwan 12.9%, Estonia 12.8%, Canada 11.9%, Israel 11.8% and Australia 11.4%).

The stability of the indicator on the high level of entrepreneurial employee activity in Croatia is an extremely important information, primarily for employers, because it is a hidden component of entrepreneurial capacity of Croatia, which is insufficiently taken into account. The gap between investment in new technologies and the lack of innovated products (Tables 13, 14, 15 and 16) is an area in which entrepreneurial activity of employees (improving production processes, innovating products, organizational solutions) would strengthen company competitiveness.

EXAMPLE 5 ENTREPRENEURIAL EMPLOYEE ACTIVITY

Silvija Canecki-Varžić, doctor, researcher, employee – Clinical Hospital Centre Osijek

Clinical trials – important for whom?

Clinical trials are a combination of interests of numerous actors, such as pharmaceutical industry, hospitals, research teams, patients and their families, public health... Each of these actors has the responsibility to contribute to the creation of institutional capacity to support such initiatives.

Silvija Canecki-Varžić, MD is a specialist in internal medicine, subspecialist of endocrinology and diabetology at the Clinical Hospital Centre Osijek (CHC) at the Department of Internal Medicine, Division of Endocrinology. Since 2008, with a short break, she has been the head of the Division. Since the start of her medical career, her professional (medical and research) interest has been very focused on endocrinology-diabetology, and in 2013 she defended her doctoral dissertation entitled "Cytokine Genetic Polymorphism in Persons with Type 2 Diabetes" (mentor Jerko Barbić, PhD, MD). In 2016, she was elected to the nominal scientific-teaching title of assistant professor in the scientific branch of internal medicine in the teaching base of CHC Osijek. She is the head mentor for general internal medicine residents at the Department of Internal Medicine, of the CHC Osijek, and she is also the head mentor / co-mentor for narrow specialization in endocrinology-diabetology at the same Department.

In the last 20 years, she succeeded in bringing many clinical trials to the hospital – she was a co-researcher, principal investigator, national coordinator on several occasions, and member of global expert forum in more than 30 multicentric, multinational projects, i.e. clinical trials of new drugs in clinical phases II b, III a and III b, and phase IV, which resulted in the registration of new drugs (exenatide, liraglutide, dulaglutide, semaglutide, saxagliptin, alogliptin, empagliflozin, insulin degludec, insulin degludec / aspart and others).

In order to become involved in clinical trials, it is necessary to have institutional readiness to accept such studies: professional reputation of the principal investigator, a competent research team, organizational capacity and research infrastructure (space, equipment). Obtaining clinical trials is a result of tough competition at international level, each component of institutional readiness is important. For example, if the administrative procedures (approvals of the Central Ethics Committee and the Ministry of Health) in Serbia are simpler and faster than in Croatia, this can be the prevailing factor for getting a clinical trial.

Clinical trials benefit not only the patients involved in the study, but also all the other patients who later use the new drugs, researchers, because it is a process of continuous training, as well as public health as a whole, because clinical trials are entirely funded by innovative pharmaceutical companies.

Such clinical trials can be conducted at CHC Osijek thanks to the research team of Canecki-Varžić, MD, as well as to teams of other doctors involved in clinical trials (about 5% of doctors of CHC Osijek). What connects this group of employees is personal perseverance, passion, adaptability and determination to conduct such studies in Osijek – this allows them to function well for years even under conditions of insufficient institutional readiness for such activity (for example, scarcity of research infrastructure – space, equipment...), but also the absence of tax incentives for such activities. With their activities, Silvija and her colleagues show how to behave entrepreneurially within a large hierarchically organized institution such as a hospital.

Silvija Canecki-Varžić, PhD is one of innovatively active employees of the Clinical Hospital Centre Osijek who have been bringing clinical trials to their work environment for years, thereby contributing to international recognition of the Clinical Hospital Centre Osijek.

It is quite clear that such people are needed in every organization. The only question is whether organizations recognize and value such people… until it is too late, and they lose them.

3 Distribution of entrepreneurial activity

Distribution of entrepreneurial activity provides insight into involvement, sectoral focus and balance of regional development, and represents a sort of indicator of quality of life in the country. It is therefore important that the capacity for entrepreneurial activity is evenly distributed in society, regardless of gender, age, educational structure, economic sector or region, i.e. that involvement of everyone is achieved.

In the GEM study, entrepreneurial capacity of the country is monitored though indicators of early-stage entrepreneurial activity up to 3.5 years old (TEA), on "established" business ventures (older than 3.5 years) and through indicators on entrepreneurial employee activity. Analysis of distribution of entrepreneurial activity is based only on indicators of early-stage entrepreneurial activity (TEA).

Entrepreneurial demographics – indicator of involvement with regard to gender and age

Croatia is not achieving significant changes towards balancing entrepreneurial activities with regard to gender (Table 24). Greater balance is more common in countries with high unemployment, which is evident within the EU (Greece and Bulgaria in this period, Spain in 2014), but is also very often present in highly developed countries (e.g. in the Netherlands).

Such patterns are also present at the subnational level in Croatia, as can be seen from the data that the difference between the involvement of men and women in early-stage entrepreneurial activity is the lowest in the least developed "regions": in Slavonia and Baranja (0.86; 1.34 and 1.53 in the observed years) and in Lika and Banovina (1.06; 1.68 and 1.05 in the observed years).

Table 24 Entrepreneurial activity by gender, measured by the TEA index

Year	TEA Men %	TEA Women %	TEA Men/TEA Women		
			Croatia	EU	Most balanced
2015	9.7	5.7	1.7	1.9	1.3 Greece
2016	11.2	5.6	2	1.8	1.1 Bulgaria
2017	11.5	6.4	1.8	1.7	1.1 Netherlands

In most countries, men more often start business ventures because of a perceived opportunity, and women out of necessity. In Croatia, in 2017, of all men who started a business venture, 71% did so because of a perceived opportunity, compared to 49% of all women. Of all women who started a business venture, 50% of women did so out of necessity, compared to 26% of all men.

Distribution of early-stage entrepreneurial activity with regard to age is quite stable with slight oscillations, with the exception of an increase in the TEA index in the 18-24 age group (Table 25). Oscillations have been present throughout the period since 2002, when Croatia was included in the GEM study, without clearly defined trends. The most entrepreneurially active age groups are 25-34 and 35-44, while there are significantly

less entrepreneurially active people in age groups 18-24 and 55-64. Unlike the distribution of early-stage entrepreneurial activity by age groups in the EU, in Croatia there are more entrepreneurially active youth in the 18-24 age group and less entrepreneurially active people in the 55-64 age group. The distribution of entrepreneurially active population by age in Croatia is more similar to the distribution of early-stage entrepreneurial activity in countries with efficiency-driven economies.

Table 25 Entrepreneurial activity by age structure, measured by the TEA index - % – share in the age group - %

Year	Age group				
	18-24	25-34	35-44	45-54	55-64
2015	13.8	30.6	28.2	19.2	8.2
2016	13.5	32.8	28.3	18.0	7.5
2017	16.1	30.5	26.7	18.5	8.2
Comparison of Croatia:					
EU 2017	11.3	29.7	28.1	19.6	11.2
Countries with efficiency-driven economies, 2017	16.5	32.2	26.0	16.8	8.4

In the 2015-2017 period, the share of youth aged 18-34 in entrepreneurial activities is stable at about 46%, which is somewhat above the average for EU countries involved in the GEM study, and closer to the average of the share of this category of adults in early-stage entrepreneurial activities in the group of countries to whose developmental level Croatia belongs (Table 26).

Table 26 Entrepreneurial activity of youth, measured by the TEA index – share in the age group - %

Year	Youth (age groups 18-24 + 25-34)			
	Croatia	EU		Efficiency-driven economies
		Average	Country with dominant participation of the youth	
2015	44.4	41.1	52.7 Latvija	48.3
2016	46.3	41.6	57.9 Estonija	49.2
2017	46.6	41.0	55.3 Poljska	48.7

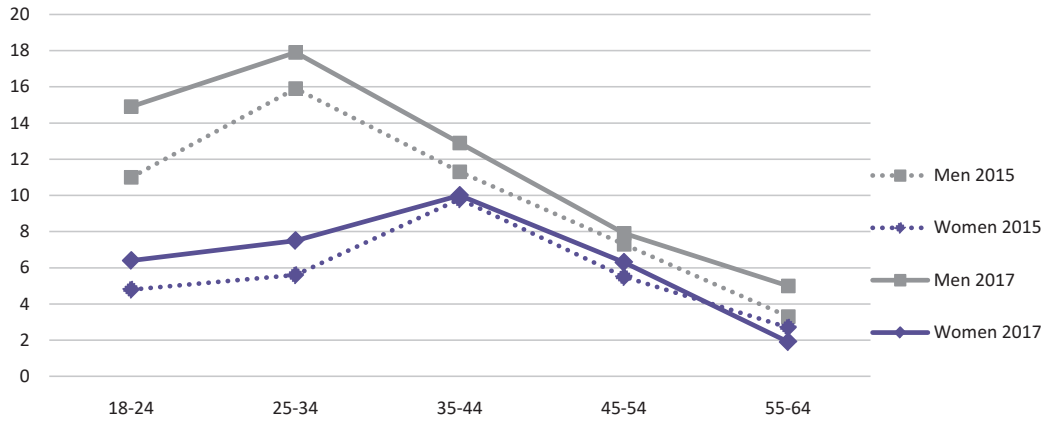
Age distribution of entrepreneurial activity with regard to gender complements information on differences in entrepreneurial activities of men and women (Table 27 and Figure 10).

Table 27 Early-stage entrepreneurial activity, measured by the TEA index, by age groups and gender, 2015-2017

Age limits	TEA Men / TEA Women		
	2015	2016	2017
18-24	2.3	2.2	2.3
25-34	2.8	1.9	2.4
35-44	1.2	1.4	1.3
45-54	1.3	2.6	1.3
55-64	1.2	3.2	2.6
Average	1.7	2.0	1.8

Figure 10 Entrepreneurial activity (TEA indexes) by gender and age structure - %

	18-24	25-34	35-44	45-54	55-64
Men 2015	11.0	15.9	11.3	7.3	3.3
Women 2015	4.8	5.6	9.8	5.5	2.7
Men 2016	11.7	16.9	13.5	9.5	4.5
Women 2016	5.4	8.7	9.5	3.6	1.4
Men 2017	14.9	17.9	12.9	7.9	5.0
Women 2017	6.4	7.5	10.0	6.3	1.9



The most entrepreneurially active are men in the 25-34 age group, and women in the 35-44 age group. The biggest difference in entrepreneurial activity according to gender is observed in 18-24 and 25-34 age groups, which stems from maternity, but also the availability of conditions that enable more equal roles in organization of family life (nurseries, kindergartens, meals in school and in the workplace, maternity leave for fathers, cultural attitude towards the role of women in the family...). Differences in entrepreneurial activity with regard to gender are decreasing in later age groups (except that in 2016 and 2017 this gap opens in the oldest age group).

More educated people are more entrepreneurially active

More educated people are more entrepreneurially active not only in Croatia but also in the groups of countries with which Croatia is compared (EU countries, efficiency-driven economies), which has for years been confirmed by GEM studies (Table 28).

Table 28 Early-stage entrepreneurial activity (TEA index) by educational level - %

Year	Less than secondary school	Secondary school	Education after secondary school	Postgraduate education
2015	0.8	9.1	9.8	10.7
2016	1.5	8.8	12.6	9.7
2017	8.4*	8.6	10.8	12.3
EU, 2017	5.7	7.0	10.6	12.5
Efficiency-driven economies, 2017	12.2	14.5	17.8	21.4
Innovation-driven economies, 2017	6.4	7.2	10.9	13.6

* big jump in the number of new entrepreneurial ventures in this category will be investigated in the study for 2018

Distribution of early-stage entrepreneurial activity measured by the TEA index with regard to the educational level is similar to the average of EU countries involved in the GEM study. At the same time, data on entrepreneurial activity and educational level for Croatia show significantly greater similarity in all categories with distribution that is characteristic for innovation-driven, rather than for efficiency-driven economies.

Sectoral distribution of entrepreneurial activity

Distribution of entrepreneurial activity by industries / sectors indicates the level of specialization, but also the differences in attractiveness for entrepreneurial activity in individual sectors. The GEM study monitors early-stage entrepreneurial activity (measured by the TEA index) in 11 different activities that can be grouped into the following four sectors: extractive, processing, business services oriented to businesses and business services oriented to end consumers (Table 29).

Table 29 Sectoral distribution of entrepreneurial activities, measured by the TEA index, share in sectors - %

Year	Extractive industry	Processing industry	Services oriented to	
			businesses (B2B)	consumers (B2C)
2015	16.8	23.6	25.5	36.1
2016	16.3	28.5	20.9	34.3
2017	20.6	25.6	22.4	31.4
EU, 2017	6.6	22.9	27.6	42.9
Efficiency-driven economies, 2017	5.5	22.7	11.4	60.4
Innovation-driven economies, 2017	4.1	19.6	28.7	47.5

Sectoral distribution of new business ventures (measured by the TEA index) in Croatia in the 2015-2017 period shows growth in the extractive industry and decline in business ventures in the sector of services oriented to businesses and consumers. Comparing Croatia with the average of entrepreneurial activity in these sectors in the EU, Croatia has less new business ventures in the sector of services oriented to consumers and significantly more in the extractive industry sector.

Distribution of entrepreneurial activity by regions oscillates, with different motives

For the purposes of the GEM study, counties and the City of Zagreb are grouped into six regions, according to the criterion of geographical and historical understanding of the regional structure of Croatia:

- Zagreb and surroundings
- Slavonia and Baranja
- Northern Croatia
- Lika and Banovina
- Istria, Primorje and Gorski Kotar
- Dalmatia

Entrepreneurial activity by regions measured by the TEA index continues to oscillate in the 2015-2017 period. Only Northern Croatia shows growth of entrepreneurial activity (Table 30).

Table 30 Regional dimension of entrepreneurial capacity of Croatia – TEA indexes, %

Year	Zagreb and surroundings	Slavonia and Baranja	Northern Croatia	Lika and Banovina	Istria, Primorje and Gorski Kotar	Dalmatia	Croatia
2015	8.2	3.9	7.7	4.4	11.8	9.0	7.7
2016	11.4	5.7	8.1	7.5	7.5	7.7	8.4
2017	9.9	5.1	8.8	6.7	9.8	11.2	8.9

By including the reasons for entry into entrepreneurial activity (perceived opportunity or necessity) (Table 31, Figure 11 and Figure 12), the picture of the distribution of entrepreneurial activity receives two additional pieces of information. Growth of entrepreneurial activity (measured by the TEA index) in Northern Croatia is accompanied by increase in starting business ventures out of necessity. Decrease in entrepreneurial activity is evident in "regions" Zagreb and surroundings, and Istria, Primorje and Gorski Kotar.

Table 31 Regional dimension of motivation for entrepreneurial activity in Croatia – TEA Opportunity and TEA Necessity, %

Regija	2015.		2016.		2017.	
	TEA Opportunity	TEA Necessity	TEA Opportunity	TEA Necessity	TEA Opportunity	TEA Necessity
Zagreb and surroundings	5.0	3.2	8.2	2.5	6.8	2.6
Slavonia and Baranja	2.4	1.5	3.6	2.0	2.4	2.7
Northern Croatia	4.6	2.8	4.9	3.2	5.2	3.6
Lika and Banovina	1.1	3.4	3.1	4.4	2.9	3.1
Istria, Primorje and Gorski Kotar	7.2	4.6	6.5	1.0	8.1	1.7
Dalmatia	5.5	3.5	4.6	2.8	6.7	4.5
Croatia	4.6	3.1	5.6	2.6	5.6	3.1

Figure 11 Regional dimension of motivation for entrepreneurial activity in Croatia – TEA Opportunity and TEA Necessity, 2015

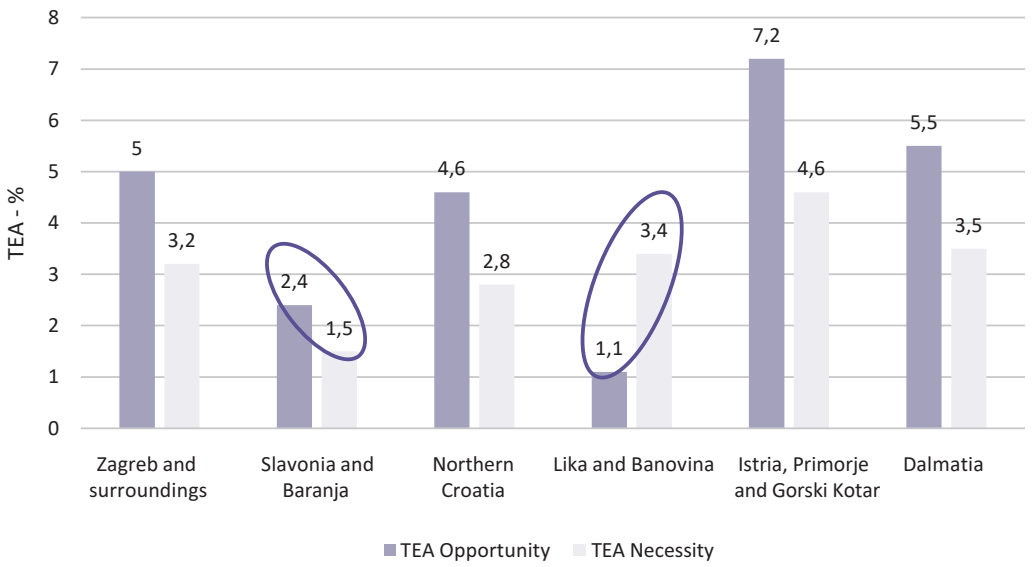
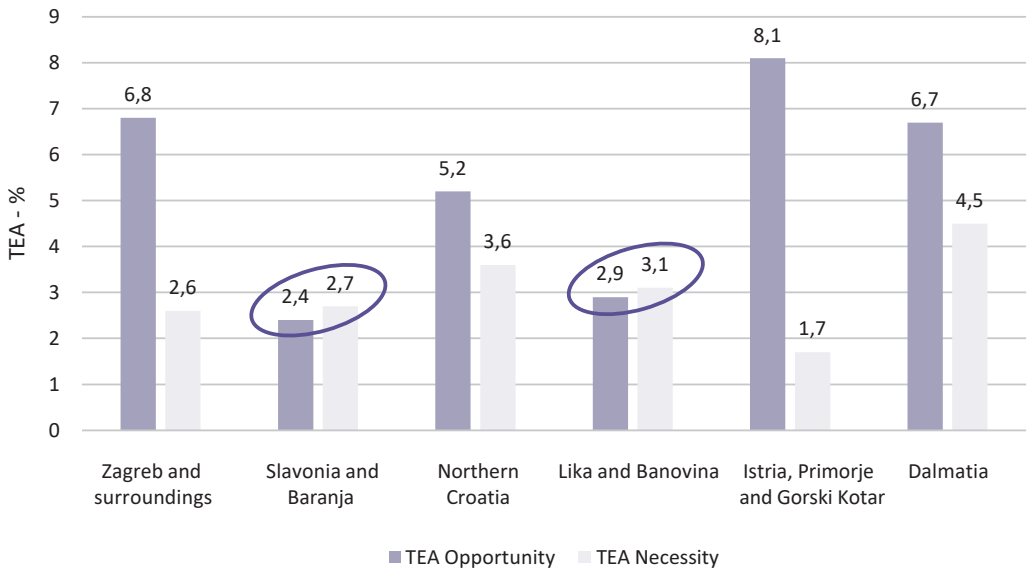


Figure 12 Regional dimension of motivation for entrepreneurial activity in Croatia – TEA Opportunity and TEA Necessity, 2017



The motivational index expressed by the ration of early-stage entrepreneurial ventures started because of perceived opportunity or out of necessity integrates the dynamics of changes in entrepreneurial activity depending on motivation. Value of motivational index below zero indicates predominance of entrepreneurial activities out of necessity, and not due to perceived opportunities. Lika and Banovina in all three years has the value of motivational index below zero, and Slavonia and Baranja in 2017, with very low ratios in previous years. Dalmatia and Northern Croatia also have very low ratios. Istria, Primorje and Gorski Kotar, and Zagreb and surroundings have the best ratios, although worsening of the motivational index in 2017 is also evident in these "regions" (Table 32).

Table 32 Regional dimension of motivation for entrepreneurial activity in Croatia – motivational index (TEA Opportunity/TEA Necessity)

Year	Zagreb and surroundings	Slavonia and Baranja	Northern Croatia	Lika and Banovina	Istria, Primorje and Gorski Kotar	Dalmatia	Croatia
2015	1.6	1.6	1.7	0.3	1.6	1.6	1.5
2016	3.3	1.8	1.5	0.7	6.5	1.6	2.2
2017	2.6	0.9	1.4	0.9	4.8	1.5	1.8

The decision to start a business venture is shaped by the ability to recognize opportunities, the presence of intent, but also the fear of failure. Positive perception of opportunities is the lowest throughout the observed period in "regions" Slavonia and Baranja, and Lika and Banovina, and the highest in Istria, Primorje and Gorski Kotar and in Dalmatia (Table 33).

Table 33 Regional dimension of positive perception of opportunities for starting a business venture in own environment - %

Year	Zagreb and surroundings	Slavonia and Baranja	Northern Croatia	Lika and Banovina	Istria, Primorje and Gorski Kotar	Dalmatia	Croatia
2015	25.4	12.6	22.0	20.3	25.8	26.2	22.3
2016	31.7	14.1	21.7	11.4	31.9	28.1	24.6
2017	34.2	20.9	27.6	24.8	45.8	45.3	33.6

A similar pattern is also present in the regional distribution of intentions to start a business venture (Table 34): there are the least people with the intention to start a business venture in Slavonia and Baranja, and in Lika and Banovina, and the most in Istria, Primorje and Gorski Kotar, and in Dalmatia.

Table 34 Regional dimension of intentions for starting a business venture - %

Year	Zagreb and surroundings	Slavonia and Baranja	Northern Croatia	Lika and Banovina	Istria, Primorje and Gorski Kotar	Dalmatia	Croatia
2015	22.4	16.2	15.9	18.1	24.6	26.5	20.9
2016	26.4	20.0	20.6	16.2	23.7	22.2	22.3
2017	22.8	17.9	21.7	19.1	28.4	26.1	22.8

The greatest variations between "regional" values are present in recognition of business opportunities (20.9% Slavonia and Baranja vs. 45.8% Istria, Primorje and Gorski Kotar, in 2017), slightly smaller in intentions (17.9% Slavonia and Baranja vs. 28.4% Istria, Primorje and Gorski Kotar, in 2017), and regions differ the least by the perception of fear of failure (Table 35).

Table 35 Regional dimension of fear of failure - %

Year	Zagreb and surroundings	Slavonia and Baranja	Northern Croatia	Lika and Banovina	Istria, Primorje and Gorski Kotar	Dalmatia	Croatia
2015	45.8	47.6	45.5	40.9	47.5	40.2	44.7
2016	45.9	47.9	45.1	48.1	46.7	44.0	46.0
2017	33.7	39.2	40.7	38.9	35.0	37.6	37.1

In 2017, fear of failure is significantly lower in all "regions" compared to previous years, which could indicate increased confidence in the entrepreneurial ecosystem, but this needs to be confirmed by research results in the coming years.

Regional differences in these three components on which the realization of entrepreneurial activity depends (Tables 33, 34 and 35) lead to the conclusion about the need for regionally profiled support (this particularly applies to services provided by support institutions, such as counselling, educational programs, mentoring programs...).

Development profiles of regions – "hard" indicators

Croatia is characterized by long-term developmental differences, as evidenced by various indicators, such as gross domestic product per capita, level of (un)employment, level of competitiveness, concentration of businesses, etc. Since 2010, development at the level of local units is monitored by the development index , which groups units of local (regional) self-government into four categories, depending on the deviation from the standardized average for Croatia:

- below 75% of development (Category I)
- 75 – 100% (Category II)
- 100-125% (Category III)
- 125% and more (Category IV)

Since this publication presents the results of the GEM study for 2017, development index valid for the 2014-2017 period was used.

In order to gain a better insight into the connection between entrepreneurial activity and indicators of development, an identity card of selected "hard" indicators of development, which were obtained from public sources (the year for which the latest data is available is indicated with each source), was prepared for each of the regions. In doing so, the problem of availability of indicators of development at subnational level was observed – for example, information about the contingent of employed persons is available, but not information about the employment rate, which is significantly more informative.

Identity card of selected "hard" development indicators of regions contains information on:

- physical indicators (surface, population, vital index),
- human capital (education),
- development (gross domestic product, competitiveness, unemployment, risk of poverty),
- business demography and performance.

The sources for these "hard" development indicators of regions are:

- Gross domestic product per capita, 2015
  GROSS DOMESTIC PRODUCT PER CAPITA FOR REPUBLIC OF CROATIA,
  NUTS 2012 – 2nd LEVEL AND COUNTIES, Table 12.1.2.2.
  https://www.dzs.hr/Hrv_Eng/Pokazatelji/Bruto%20domaci%20proizvod.xls
- Population, 2016
  Statistical Yearbook of the Republic of Croatia 2017,
  Croatian Bureau of Statistics, Zagreb, December, 2017,
  https://www.dzs.hr/Hrv_Eng/ljetopis/2017/sljh2017.pdf
- Vital index (live births per 100 deaths), 2016 – Statistical Yearbook of the Republic of Croatia 2017, Croatian Bureau of Statistics, Zagreb, December, 2017,
  https://www.dzs.hr/Hrv_Eng/ljetopis/2017/sljh2017.pdf
- Education, 2011
  Census of Population, Houses and Dwellings 2011, Croatian Bureau of Statistics
  Croatian Bureau of Statistics, Statistical Report No. 1582, 2016,
  compiled by: Croatian Chamber of Economy, County Chamber Osijek

- Unemployment, 2017
  Croatian Employment Service and Croatian Pension Insurance Institute (monthly data), data obtained from Croatian Pension Insurance Institute, Regional Office Osijek, January 17, 2018
- Risk of poverty rate, 2011
  Risk of poverty rate is the percentage of people who have disposable income or consumption below the poverty risk threshold. The poverty risk threshold is set at 60% of the median of disposable income or consumption of all households. According to the income method, the Central Bureau of Statistics measures poverty using the Survey on Income and living Conditions (EU-SILC), which is conducted annually in all EU member states. According to the consumption method, poverty is measured by the Households Budget Survey (HBS), which is conducted every few years. Survey on Income and Living Conditions is reliable at the level of statistical regions (NUTS 2), and Households Budget Survey only at the national level. Survey studies (due to a small sample) are not representative at lower territorial levels, because of which poverty data is not available at these levels.
  In 2016, the Croatian Bureau of Statistics, in collaboration with the World Bank, conducted the "Mapping and assessing the geographical distribution of poverty and social exclusion in small areas of the Republic of Croatia" survey. Survey results using data on disposable income and consumption are presented in two separate reports at
  https://www.dzs.hr/Hrv/DBHomepages/Osobna%20potrosnja%20i%20pokazatelji%20siromastva/Osobna%20potrosnja%20i%20pokazatelji%20siromastva.htm
  Because of the fact that the European Union produces annual poverty risk estimates using the income approach, poverty rate indicators calculated using this approach are used in this publication
  https://www.dzs.hr/Hrv/DBHomepages/Osobna%20potrosnja%20i%20pokazatelji%20siromastva/Metodologija_SILC_WB.pdf
- Employment, 2015
  Employment rate data at the subnational level is not available because data on working-age population (persons over the age of 15) exist only from the population census (i.e. from 2011) and are not updated annually[23]. As a result, the number of employees is shown only in the business performance table, based on data obtained from FINA.
- Development index, 2013
  Values of development index and indicators for calculation of development index at county level 2013, Ministry of Regional Development and EU Funds, December 27, 2013
  https://razvoj.gov.hr/UserDocsImages//O%20ministarstvu/Regionalni%20razvoj/indeks%20razvijenosti/Dosada%C5%A1nji/2013//Vrijednosti%20indeksa%20razvijenosti%20na%20%C5%BEupanijskoj%20razini%202013..pdf
- Competitiveness, 2013
  National Competitiveness Council, UNDP Croatia Programme, Regional Competitiveness Index Croatia 2013, Zagreb, 2014 www.konkurentnost.hr
- Number and structure of business entities by counties, situation on June 30, 2017
  First Release No. 11.1.2/1, August 10, 2017, https://www.dzs.hr/Hrv_Eng/publication/2017/11-01-02_01_2017.htm
- Business performance, situation on December 31, 2015, calculated from the FINA database for 2015, within the Development and application of growth potential prediction models for small and medium enterprises project, in which FINA is a partner organization. The project is financed by the Croatian Science Foundation in the 2014-2018 period.

http://www.efos.unios.hr/development-and-application-of-growth-potential-prediction-models/ or http://www.potento.eu/

[23] Stopa zaposlenosti je postotni udio zaposlenih u radno sposobnom stanovništvu, a radno sposobno stanovništvo čine osobe starije od navršenih 15 godina (definicije Državnog zavoda za statistiku).

Zagreb and surroundings

	Surface (km²)	Population (mid-2016, estimate)	Population per km² 2016	Vital index 2016
City of Zagreb	641	802 338	1 251.70	95.2
Zagreb	3 060	314 549	102.79	80.6
Total	3 701	1 116 887	301.78	87.9
Rank*			1	1

*rank based on the average values for regions

Development and competitiveness

	Development index %	GDP pc in EUR	Competitiveness rank	Business environment quality rank	Business sector quality rank
	2013.	2015	2013.	2013.	2013.
City of Zagreb	186.44	18 579	1	2	3
Zagreb County	124.23	8 265	7	4	5
Average	155.34	13 422			
Rank*	1	1			

*rank based on the average values for regions

Human capital

	Population (mid-2016, estimate)	Share (%) of illiterates in population aged 10 and older 2011	Share (%) of highly educated people in population older than 15 years 2011
City of Zagreb	802 338	0.3	28.98
Zagreb County	314 549	0.8	12.45
Total/Average	1 116 887	0.55	20.72
Rank*		5	1

*rank based on the average values for regions

Unemployment rate and risk of poverty rate (%)

	Unemployment, average 2017	Risk of poverty rate 2011
City of Zagreb	5.5	9.8
Zagreb County	10.7	16.7
Total/Average	8.1	13.3
Rank*	5	5

*rank based on total / average values for regions

Number of business entities – June 30, 2017

	Number of registered legal entities	Number of registered legal entities (per 1,000 inhabitants)	Number of active legal entities	Number of active legal entities (per 1,000 inhabitants)	Number of registered crafts and trades and freelancers	Number of registered crafts and trades and freelancers (per 1,000 inhabitants)
City of Zagreb	83 527	105.73	49 405	62.54	14 626	18.51
Zagreb County	16 264	51.21	9 753	30.71	4 589	14.45
Total/Average	99 791	90.09	59 158	53.41	19 215	17.35
Rank*		1		1		3

*rank based on the average values for regions

Business performance, 2015

	Total revenue		% of revenue from exports	Profit/loss		Number of employees
	HRK 000	Per employee, HRK		HRK 000	% of total revenue	
City of Zagreb	327 970 434	929 353	13.9	9 218 062	2.8	352 902
Zagreb County	43 972 609	865 092	15.9	1 230 415	2.8	50 830
Total/Average	371 943 043	921 262	14.1	10 448 478	2.8	403 732
Rank*		1	6		3	

*rank based on the average values for regions

Slavonia and Baranja

	Surface (km²)	Population (mid-2016, estimate)	Population per km² 2016	Vital index 2016
Požega-Slavonija	1 823	71 920	39.45	62.5
Brod-Posavina	2 030	148 373	73.09	64.1
Osijek-Baranja	4 155	290 412	69.89	62.9
Vukovar-Srijem	2 454	165 799	67.56	62.2
Total/Average	10 462	676 504	64.66	62.9
Rank*			5	5

*rank based on the average values for regions

Development and competitiveness

	Development index %	GDP pc in EUR	Competitiveness rank	Business environment quality rank	Business sector quality rank
	2013.	2015	2013.	2013.	2013.
Požeško-slavonska županija	33.81	6 061	21	20	21
Brodsko-posavska županija	18.43	5 962	16	14	14
Osječko-baranjska županija	46.07	8 413	11	13	09
Vukovarsko-srijemska županija	18.73	6 235	20	21	18
Prosjek	29.26	6 668			
Rang*	6	6			

*rank based on the average values for regions

Human capital

	Population (mid-2016, estimate)	Share (%) of illiterates in population aged 10 and older 2011	Share (%) of highly educated people in population older than 15 years 2011
Požega-Slavonija County	71 920	1.6	10.01
Brod-Posavina County	148 373	1.2	9.47
Osijek-Baranja County	290 412	1	12.73
Vukovar-Srijem County	165 799	1.6	9.45
Total/Average	676 504	1.35	10.42
Rank*		2	5

*rank based on the average values for regions

Unemployment rate and risk of poverty rate (%)

	Unemployment, average 2017	Risk of poverty rate 2011
Požega-Slavonija County	16.2	26.5
Brod-Posavina County	18.8	35.9
Osijek-Baranja County	21.7	28.0
Vukovar-Srijem County	22.5	31.9
Total/Average	19.8	30.6
Rank*	1	1

*rank based on the average values for regions

Number of business entities – June 30, 2017

	Number of registered legal entities	Number of registered legal entities (per 1,000 inhabitants)	Number of active legal entities	Number of active legal entities (per 1,000 inhabitants)	Number of registered crafts and trades and freelancers	Number of registered crafts and trades and freelancers (per 1,000 inhabitants)
Požega-Slavonija County	2 363	30.28	1 367	17.52	1 011	12.96
Brod-Posavina County	5 160	32.54	2 839	17.90	1 906	12.02
Osijek-Baranja County	13 461	44.13	7 501	24.59	3 723	12.21
Vukovar-Srijem County	5 748	32.02	3 108	17.31	2 158	12.02
Total/Average	26 732	37.07	14 815	20.54	8 798	12.20
Rank*		6		5		6

*rank based on the average values for regions

Business performance, 2015

	Total revenue		% of revenue from exports	Profit/loss		Number of employees
	HRK 000	Per employee, HRK		HRK 000	% of total revenue	
Požega-Slavonija County	3 471 676	436 909	21.1	-339 732	-9.8	7 946
Brod-Posavina County	7 939 583	526 114	30.1	42 426	0.5	15 091
Osijek-Baranja County	24 297 545	637 563	19.0	152 077	0.6	38 110
Vukovar-Srijem County	13 869 416	784 736	17.5	412 351	2.9	17 674
Total/Average	49 578 220	628 998	20.5	267 123	0.5	78 821
Rank*		2	4		6	

*rank based on the average values for regions

Northern Croatia

	Surface (km²)	Population (mid-2016, estimate)	Population per km² 2016	Vital index 2016
Krapina-Zagorje	1 229	127 748	103.94	57.3
Varaždinska	1 262	170 563	135.15	68.8
Koprivničko-križevačka	1 748	110 976	63.49	60.8
Bjelovar-Bilogora	2 640	111 867	42.37	57.8
Virovitica-Podravina	2 024	79 111	39.09	61.9
Međimurje	729	112 089	153.76	101.2
Total/Average	9 632	712 354	73.96	68
Rank*			3	3

*rank based on the average values for regions

Development and competitiveness

	Development index %	GDP pc in EUR	Competitiveness rank	Business environment quality rank	Business sector quality rank
	2013.	2015	2013.	2013.	2013.
Krapina-Zagorje County	73.24	6 887	12	12	12
Varaždin County	86.34	8 871	2	1	2
Koprivnica-Križevci County	59.19	8 791	8	5	7
Bjelovar-Bilogora County	23.29	7 342	15	15	16
Virovitica-Podravina County	5.56	5 852	18	17	17
Međimurje County	69.65	9 029	4	6	4
Average	52.88	7 795			
Rank*	5	5			

*rank based on the average values for regions

Human capital

	Population (mid-2016, estimate)	Share (%) of illiterates in population aged 10 and older 2011	Share (%) of highly educated people in population older than 15 years 2011
Krapina-Zagorje County	111 867	0.8	9.17
Varaždin County	110 976	0.5	11.92
Koprivnica-Križevci County	127 748	0.8	10.69
Bjelovar-Bilogora County	112 089	1.3	9.30
Virovitica-Podravina County	170 563	1.2	8.24
Međimurje County	79 111	0.6	10.00
Total/Average	712 354	0.87	9.89
Rank*		4	6

*rank based on the average values for regions

Unemployment rate and risk of poverty rate (%)

	Unemployment, average 2017	Risk of poverty rate 2011
Krapina-Zagorje County	9.2	18.8
Varaždin County	6.2	17.1
Koprivnica-Križevci County	9.6	20.3
Bjelovar-Bilogora County	19.7	20.0
Virovitica-Podravina County	24.8	33.4
Međimurje County	8.1	20.8
Total/Average	12.93	21.7
Rank*	4	3

*rank based on the average values for regions

Number of business entities – June 30, 2017

	Number of registered legal entities	Number of registered legal entities (per 1,000 inhabitants)	Number of active legal entities	Number of active legal entities (per 1,000 inhabitants)	Number of registered crafts and trades and freelancers	Number of registered crafts and trades and freelancers (per 1,000 inhabitants)
Krapina-Zagorje County	4 747	39.64	2 869	23.96	2 220	18.54
Varaždin County	7 968	68.94	4 809	41.61	2 530	21.89
Koprivnica-Križevci County	4 782	35.98	2 755	20.73	1 348	10.14
Bjelovar-Bilogora County	5 090	44.73	2 859	25.12	1 274	11.19
Virovitica-Podravina County	2 951	16.77	1 575	8.95	972	5.52
Međimurje County	6 511	76.75	3 898	45.95	1 222	14.40
Total/Average	32 049	43.14	18 765	25.26	9 566	12.88
Rank*		4		4		5

*rank based on the average values for regions

Business performance, 2015

	Total revenue		% of revenue from exports	Profit/loss		Number of employees
	HRK 000	Per employee, HRK		HRK 000	% of total revenue	
Krapina-Zagorje County	10 127 167	535 687	32.6	391 255	3.9	18 905
Varaždin County	22 638 400	571 100	35.4	223 087	1.0	39 640
Koprivnica-Križevci County	9 572 452	605 698	22.1	514 698	5.4	15 804
Bjelovar-Bilogora County	7 224 194	505 153	12.1	127 468	1.8	14 301
Virovitica-Podravina County	3 470 077	509 631	22.0	12 471	0.3	6 809
Međimurje County	12 074 344	474 658	33.1	343 854	2.8	25 438
Total/Average	65 106 634	538 530	29.3	1 612 833	2.5	120 897
Rank*		4	1		4	

*rank based on the average values for regions

Lika and Banovina

	Surface (km²)	Population (mid-2016, estimate)	Population per km2 2016	Vital index 2016
Sisak-Moslavina	4 468	157 204	35.18	56.7
Karlovac	3 626	120 321	33.18	55.1
Lika-Senj	5 353	46 888	8.76	44.1
Total/Average	13 447	324 413	24.13	52
Rank*			6	6

*rank based on the average values for regions

Development and competitiveness

	Development index %	GDP pc in EUR	Competitiveness rank	Business environment quality rank	Business sector quality rank
	2013.	2015	2013.	2013.	2013.
Sisak-Moslavina County	38.70	7 724	19	19	19
Karlovac County	56.34	8 007	13	11	13
Lika-Senj County	64.82	8 155	17	18	20
Average	53.29	7 962			
Rank*	4	4			

*rank based on the average values for regions

Human capital

	Population (mid-2016, estimate)	Share (%) of illiterates in population aged 10 and older 2011	Share (%) of highly educated people in population older than 15 years 2011
Sisak-Moslavina County	120 321	1.5	10.48
Karlovac County	46 888	1.4	12.85
Lika-Senj County	157 204	1.2	10.47
Total/Average	324 413	1.37	11.27
Rank*		1	4

*rank based on the average values for regions

Unemployment rate and risk of poverty rate (%)

	Unemployment, average 2017	Risk of poverty rate 2011
Sisak-Moslavina County	26.0	23.7
Karlovac County	14.6	23.2
Lika-Senj County	15.2	19.8
Total/Average	18.6	22.2
Rank*	2	2

*rank based on the average values for regions

Number of business entities – June 30, 2017

	Number of registered legal entities	Number of registered legal entities (per 1,000 inhabitants)	Number of active legal entities	Number of active legal entities (per 1,000 inhabitants)	Number of registered crafts and trades and freelancers	Number of registered crafts and trades and freelancers (per 1,000 inhabitants)
Sisak-Moslavina County	5.865	45.50	3.006	23.32	1.865	14.47
Karlovac County	5.281	103.70	2.959	58.10	1.776	34.87
Lika-Senj County	2.148	12.46	1.233	7.15	961	5.57
Total/Average	13.294	37.74	7.198	20.43	4.602	13.06
Rank*		5		6		4

*rank based on the average values for regions

Business performance, 2015

	Total revenue		% of revenue from exports	Profit/loss		Number of employees
	HRK 000	Per employee, HRK		HRK 000	% of total revenue	
Sisak-Moslavina County	9 297 707	566 519	38.0	20 291	0.2	16 412
Karlovac County	8 356 401	346 107	22.1	653 365	7.8	24 144
Lika-Senj County	1 856 096	452 817	15.3	42 340	2.3	4 099
Total/Average	19 510 204	436 910	29.0	715 997	3.67	44 655
Rank*		6	2		2	

*rank based on the average values for regions

Istria, Primorje and Gorski Kotar

	Surface (km²)	Population (mid-2016, estimate)	Population per km² 2016	Vital index 2016
Primorje-Gorski Kotar	3 588	289 479	80.68	63.3
Istria	2 813	208 105	73.98	70.9
Total/Average	6 401	497 584	77.74	67.1
Rank*			2	4

*rank based on the average values for regions

Development and competitiveness

	Development index %	GDP pc in EUR	Competitiveness rank	Business environment quality rank	Business sector quality rank
	2013.	2015	2013.	2013.	2013.
Primorje-Gorski Kotar County	139.21	12 770	5	8	6
Istria County	156.80	13 225	3	9	1
Average	148.01	12 998			
Rank*	2	2			

*rank based on the average values for regions

Human capital

	Population (mid-2016, estimate)	Share (%) of illiterates in population aged 10 and older 2011	Share (%) of highly educated people in population older than 15 years 2011
Primorje-Gorski Kotar County	289 479	0.3	20.07
Istria County	208 105	0.3	16.57
Total/Average	497 584	0.3	18.32
Rank*		6	1

*rank based on the average values for regions

Unemployment rate and risk of poverty rate (%)

	Unemployment, average 2017	Risk of poverty rate 2011
Primorje-Gorski Kotar County	8.0	11.9
Istria County	4.6	11.9
Total/Average	6.3	11.9
Rank*	6	6

*rank based on the average values for regions

Number of business entities – June 30, 2017

	Number of registered legal entities	Number of registered legal entities (per 1,000 inhabitants)	Number of active legal entities	Number of active legal entities (per 1,000 inhabitants)	Number of registered crafts and trades and freelancers	Number of registered crafts and trades and freelancers (per 1,000 inhabitants)
Primorje-Gorski Kotar County	22 159	106.51	12 932	62.16	9 223	44.33
Istria County	19 971	67.43	11 958	40.37	7 020	23.70
Total/Average	42 130	83.55	24 890	49.36	16 243	32.21
Rank*		2		2		1

*rank based on the average values for regions

Business performance, 2015

	Total revenue		% of revenue from exports	Profit/loss		Number of employees
	HRK 000	Per employee, HRK		HRK 000	% of total revenue	
Primorje-Gorski Kotar County	34 760 031	586 182	21.8	729 925	2.1	59 299
Istria County	30 737 993	593 214	27.7	2 378 528	7.7	51 816
Total/Average	65 498 025	589 461	24.6	3 108 454	4.7	111 115
Rank*		3	3		1	

*rank based on the average values for regions

Dalmatia

	Surface (km²)	Population (mid-2016, estimate)	Population per km² 2016	Vital index 2016
Zadar	3 646	169 581	46.51	80.6
Šibenik-Knin	2 984	103 021	34.52	52.4
Split-Dalmatia	4 540	452 035	99.57	84.0
Dubrovnik-Neretva	1 781	121 970	68.48	93.5
Total/Average	12 951	846 607	65.37	77.6
Rank*			4	2

*rank based on the average values for regions

Development and competitiveness

	Development index %	GDP pc in EUR	Competitiveness rank	Business environment quality rank	Business sector quality rank
	2013.	2015	2013.	2013.	2013.
Zadar County	106.39	8 604	6	3	8
Šibenik-Knin County	80.93	8 291	14	16	15
Split-Dalmatia County	93.75	8 186	9	7	11
Dubrovnik-Neretva County	120.84	10 717	10	10	10
Average	100.48	8 950			
Rank*	3	3			

*rank based on the average values for regions

Human capital

	Population (mid-2016, estimate)	Share (%) of illiterates in population aged 10 and older 2011	Share (%) of highly educated people in population older than 15 years 2011
Zadar County	121 970	1.5	14.79
Šibenik-Knin County	452 035	2.0	13.21
Split-Dalmatia County	103 021	0.8	18.00
Dubrovnik-Neretva County	169 581	0.4	18.72
Total/Average	846 607	1.17	16.18
Rank*		3	3

*rank based on the average values for regions

Unemployment rate and risk of poverty rate (%)

	Unemployment, average 2017	Risk of poverty rate 2011
Zadar County	10.0	25.2
Šibenik-Knin County	15.1	24.7
Split-Dalmatia County	17.0	19.5
Dubrovnik-Neretva County	11.7	14.5
Total/Average	13.45	21.0
Rank*	4	4

*rank based on the average values for regions

Number of business entities – June 30, 2017

	Number of registered legal entities	Number of registered legal entities (per 1,000 inhabitants)	Number of active legal entities	Number of active legal entities (per 1,000 inhabitants)	Number of registered crafts and trades and freelancers	Number of registered crafts and trades and freelancers (per 1,000 inhabitants)
Zadar County	9 156	74.70	5 274	43.03	4 793	39.10
Šibenik-Knin County	5 655	12.43	2 914	6.41	2 804	6.17
Split-Dalmatia County	27 219	248.86	15 600	142.63	12 081	110.45
Dubrovnik-Neretva County	8 122	47.77	4 667	27.45	3 973	23.37
Total/Average	50 152	58.54	28 455	33.21	23 651	27.61
Rank*		3		3		2

*rank based on the average values for regions

Business performance, 2015

	Total revenue		% of revenue from exports	Profit/loss		Number of employees
	HRK 000	Per employee, HRK		HRK 000	% of total revenue	
Zadar County	12 546 365	620 278	25.1	240 962	1.9	20 227
Šibenik-Knin County	5 378 914	491 046	12.2	-227 108	-4.2	10 954
Split-Dalmatia County	40 551 223	559 566	14.8	822 510	2.0	72 469
Dubrovnik-Neretva County	9 420 026	343 684	18.2	117 057	1.2	27 409
Total/Average	67 896 528	518 061	17.0	953 421	1.4	131 059
Rank*		5	5		5	

*rank based on the average values for regions

Regional distribution of entrepreneurial activity and development profiles of regions

Differences in the perception of opportunities and intentions, differences in entrepreneurial activity, and particularly differences in the motivational index at the subnational level are complementary with the "hard" indicators of general (non)development of these areas: development index, GDP per capita and unemployment level (Table 36):

Table 36 Development profiles of regions in Croatia, 2017

Region	Development index		GDP pc 2015		Unemployment 2017		Entrepreneurial activity 2017			
	%	Rank	EUR	Rank	%	Rank	New entrepreneurial activity		Motivational index	
							TEA	Rank	TEA Opportunity/ TEA Necessity	Rank
Zagreb and surroundings	155.34	1	13 422	1	8.1	5	9.9	2	2.6	2
Slavonia and Baranja	29.26	6	6 668	6	19.8	1	5.1	6	0.9	5
Northern Croatia	52.88	5	7 795	5	12.93	4	8.8	4	1.4	4
Lika and Banovina	53.29	4	7 962	4	18.6	2	6.7	5	0,9	5
Istria, Primorje and Gorski Kotar	148.01	2	12 998	2	6.3	6	9.8	3	4.8	1
Dalmatia	100.48	3	8 950	3	13.45	3	11.2	1	1.5	3

Information on the motivational index (ratio of early-stage entrepreneurial ventures started because of perceived opportunity or out of necessity) at the subnational level contributes to the understanding of the level of (non) development of individual regions.

Long-lasting lowest motivational indexes of Lika and Banovina (1.1 in 2012, 0.8 in 2013, 1.7 in 2014, below zero in continuity since 2015), as well as of Slavonia and Baranja, are accompanied by a low level of development, a low level of GDP per capita and high unemployment. Entrepreneurial activity in these regions, measured by the TEA index (Table 36), is the result of entrepreneurial activity of those who were forced to do so by necessity (unemployment), and such entrepreneurial ventures are more likely to fail, since they are poorly prepared because of lack of knowledge, but are also often under-invested. This requires coordinated involvement of various institutions (educational institutions and institutions providing professional services to small businesses, financial institutions providing microcredit programs, government support programs through guarantee schemes, vouchers for cooperation with research institutions...).

Strengthening the motivational index (i.e. increasing the share of people who are entrepreneurially active because of perceived opportunities) will have an impact on increasing the number of "established" businesses[24], businesses with growth potential, and then, with the passage of time, on the level of development measured by gross domestic product.

[24] The fact that the least developed region of Lika and Banovina has the lowest number of "established" businesses throughout the entire observed 2015-2017 period also suggests such a conclusion..

4 Entrepreneurial environment of Croatia in international perspective 2015-2017

Access to money
Government policies towards entrepreneurship
Government programs for entrepreneurship
Entrepreneurship education
Transfer of research and development
Professional and commercial infrastructure
Openness of the domestic market
Physical infrastructure
Cultural and social norms
Efficiency of the entrepreneurial environment

In the GEM conceptual framework (Figure 1, Chapter 1), entrepreneurial environment is described by various components, which, along with macroeconomic policies, create a context characteristic of each individual county within which entrepreneurial activity at personal level occurs.

Entrepreneurial activity is the result of a complex interaction of the individual with the environment, which can be either stimulating or constraining at any phase of life cycle of entrepreneurial activity: from perception of opportunities, shaping intentions to starting a business venture, from growth management to termination of business.

The availability and level of quality of individual components of entrepreneurial environment in the GEM research are evaluated by experts, who are selected based on their reputation of knowledge of a specific component of entrepreneurial environment. The sample of experts consists of entrepreneurs – practitioners, scientists who are involved in research of entrepreneurship, representatives of government institutions, experts from financial, education and non-government sector, and experts in the field of infrastructure (physical, professional and commercial)[25]. A more detailed description of the methodology for gathering experts' opinions about the quality of components of entrepreneurial environment is given in Appendix 1.

In 2017, experts evaluated the entrepreneurial environment using a standardized questionnaire in which components of entrepreneurial environment are described with 54 statements (one component is typically described with 3 to 8 statements). By expressing their agreement / disagreement with individual statements using ratings from 1 to 9 (where 1 = completely inaccurate, and 9 = completely accurate), an estimate of availability and quality of each individual component of entrepreneurial environment is obtained[26].

Statements are grouped so that they form measurement instruments[27] , which make it possible to interpret perception of experts regarding:

- Availability and structure of sources of financing for entrepreneurs,
- Government policies towards entrepreneurship,
- Government programs aimed at encouraging entrepreneurship,
- Educational programs focused on the development of entrepreneurial competencies,

[25] The list of experts who participated in the evaluation of the components of entrepreneurial environment in 2017 is given in Appendix 2.

[26] Od 2015. godine koristi se Likertova skala u rasponu od 1-9. Za usporedbu s prethodnim godinama potrebno je obaviti transponiranje na skalu od 1-5. I bez transponiranja može se uspoređivati u kojoj mjeri su pojedine komponente stimulirajuće ili ograničavajuće za poduzetničku aktivnost, jer je u skali 1-5 ocjena 3 razdjelnik za stimulirajuće (vrijednosti iznad 3) i ograničavajuće (vrijednost ispod 3) djelovanje pojedinih komponenti.

[27] Cronbach's alpha test with values between 0.785 and 0.932 indicates high reliability of measuring instruments, which gives credibility to evaluations of quality of components of entrepreneurial environment (for values of individual components of entrepreneurial environment see Appendix 1).

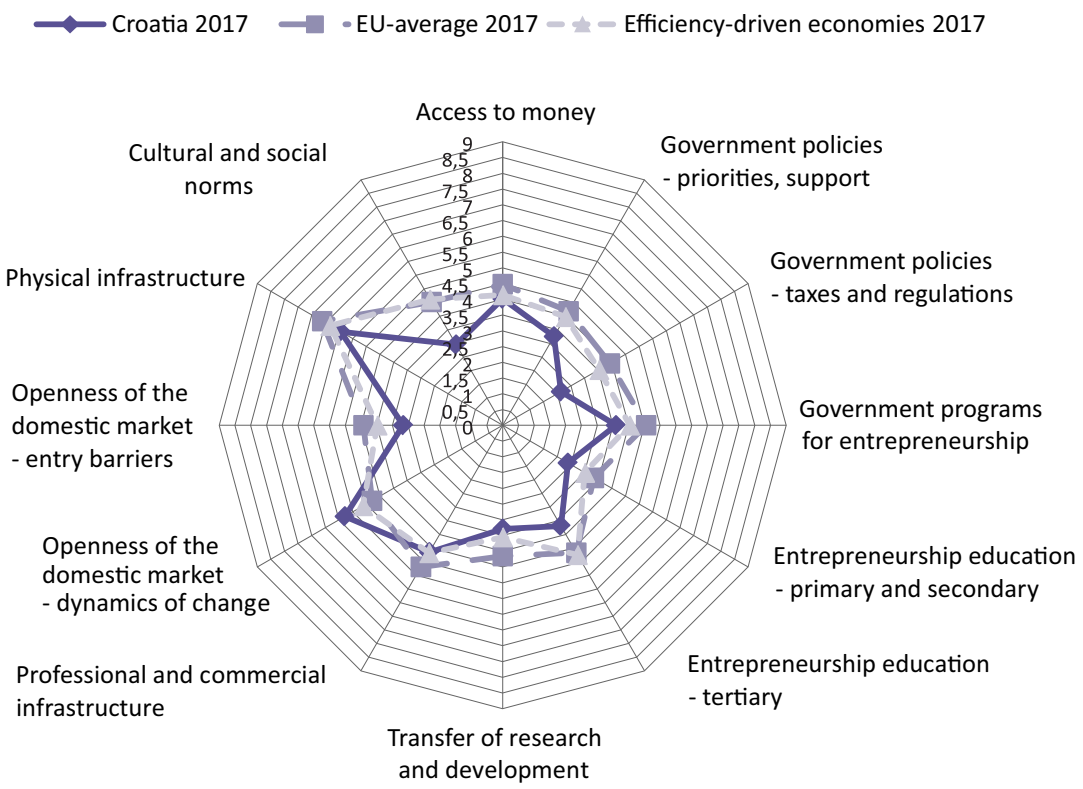
- Transfer of knowledge and technology,
- Quality of professional and commercial infrastructure,
- Openness of the domestic market,
- Availability of physical infrastructure,
- Cultural and social norms.

Expert evaluation of entrepreneurial environment, under the assumption of continuous participation in the GEM study, enables:

- Evaluating perception of quality of each component, where rating above 5 signals a stimulating environment, and rating below 5 a limiting (discouraging) environment,
- Observing changes in perception of quality of individual components of entrepreneurial environment through time (in Croatia, since 2002). This report presents the indicators for the 2015-2017 period,
- Comparison of differences between perception of quality of individual components of entrepreneurial environment in space (i.e. among countries participating in the GEM study in the same year).

In 2017, entrepreneurial environment in Croatia still significantly lags behind by quality compared to the average of entrepreneurial environment in 18 EU countries involved in the GEM study, as well as to the average of countries to whose developmental level Croatia belongs (efficiency-driven economies)[28] (Figure 13). Only the dynamics of change in the domestic market (as one of the components of the openness of the domestic market) is higher than the average of groups with which Croatia is compared.

Figure 13 Experts' ratings of the quality of entrepreneurial environment in Croatia, 2017 – comparison with the EU average and countries with efficiency-driven economies



[28] In the 2016 GEM Global Report and in this report, countries with economies in the transition between efficiency and innovation – like Croatia, have been included in the group of countries with efficiency-driven economies.

For a better insight into changes in the perception of the quality of entrepreneurial environment, Tables 37 to 49 present average ratings for each of the nine components of entrepreneurial environment in Croatia for the 2015-2017 period. The average values for EU countries involved in the GEM study in those years allow comparison of dynamics of change in Croatia and in the EU, and the "distance" from the best rated component can be further analysed by using differences in the ratings of individual statements that measure the quality of a particular component of entrepreneurial environment. Comparison with the best rated components of entrepreneurial environment in all countries involved in the GEM study in 2017 (54 countries) expands the platform for learning from best practices in designing entrepreneurial environment.

Access to money

According to the ratings of the quality of access to money (Table 37) Croatia is lagging behind the average of EU countries involved in the GEM study throughout the observed period, but the difference is decreasing, and Croatia is moving away from the worst. Although there is a significant supply of bank loans in the money market, in Croatia the problem of shortage of adequate type of money (venture capital, equity) for new or growing entrepreneurial ventures repeats in all years of GEM research. Entering the stock market is still a negligible strategy of Croatian businesses for financing business growth.

Table 37 Access to money, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	3.3	4.4	5.74	Netherlands	3.03	Greece
2016	3.79	4.48	5.52	Netherlands	3.32	Cyprus
2017	4.02	4.48	6.01	Netherlands	3.22	Greece

Of the 54 countries included in the GEM study in 2017, Indonesia has the highest rating for this component of entrepreneurial environment (6.17), and Guatemala the worst (2.64).

Government policies towards entrepreneurship

In the GEM study, government policies towards entrepreneurship are observed through two aspects: government policies that identify priorities and support for entrepreneurship and government policies aimed at simplifying the regulatory framework within which entrepreneurial activity is taking place. During the entire observed period, ratings of both groups of government policies (Table 38 and Table 39) are lower than the average for EU countries, and at the same time are among the lowest ratings in comparison with other components of entrepreneurial environment in Croatia (see Table 50). Particularly low are the ratings for government policies towards regulatory framework, which are considerably lower than the average of EU countries (in all three years, Croatia had the lowest rated government policies towards regulatory framework of all EU countries). Of the ten lowest rated statements related to components of entrepreneurial environment in the 2015-2017 period, five are related to government policies (it is difficult for new and growing businesses to deal with bureaucracy, legal and regulatory requirements; tax burden for new and growing businesses; inconsistency and unpredictability of tax policy; the state does nothing to change the unfavourable position of new businesses when participating in public procurement; inability to obtain all the necessary permits and certificates within a week)[29] (Table 52).

Table 38 Government policies – priorities and supports, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	2.84	4.15	6.48	Belgium	2.71	Hungary
2016	2.8	3.98	5.87	France	2.61	Bulgaria
2017	3.26	4.18	5.56	France	2.98	Bulgaria

[29] These aspects of government policies towards entrepreneurship were also rated the lowest in the 2012-2014 period.

Of the 54 countries included in the GEM study in 2017, UAE has the highest rating for this component of entrepreneurial environment (6.33), and Guatemala the worst (2.4).

Table 39 Government policies – taxes and regulations, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	1.99	3.90	5.8	Portugal	1.99	Croatia
2016	2.18	3.90	6.34	Estonia	2.18	Croatia
2017	2.14	3.93	5.75	Netherlands	2.14	Croatia

Of the 54 countries included in the GEM study in 2017, UAE has the highest rating for this component of entrepreneurial environment (5.94), and Puerto Rico the worst (1.83).

The regulatory framework within which the economy of any country operates can support or hamper entrepreneurial initiatives. In all the years since Croatia has been involved in GEM research (since 2002), government policies towards regulatory framework were given the lowest ratings, which means that this component of entrepreneurial environment has a restrictive, rather than stimulative effect on entrepreneurial activity. For this reason, in almost all of the publications with which we presented the results of the GEM study, we have shown examples of non-functioning of the regulatory framework, guided by the criterion of biggest constraints – for example, the administration's slowness (absence of application of the principle of administrative silence) or culture of non-payment, which leads many businesses to mere survival or failure (absence of application of the EU Late Payment Directive 2011/7/EU, which regulates commercial transactions between the state / public institutions and the business sector, and commercial transactions within the business sector).

Despite the fact that we have been repeating and repeating these examples, and that other international studies (on competitiveness, ease of doing business, corruption) have confirmed their persistent presence, the regulatory framework is still complicated, administration is slow, and illiquidity is present.

Instead of a comprehensive analysis why Croatia hasn't been able to solve these problems for fifteen years, perhaps the experience of implementation of a small administrative intervention can be the answer.

EXAMPLE 6 CHANGES IN ADMINISTRATIVE PROCEDURES ARE STILL SLOW

The story of the seal

In its Doing Business Reform Memorandum for the Republic of Croatia (May 2015), the World Bank recommended a series of measures to improve the business environment in the short- and medium-term. The first among the recommendations is:

"Eliminate the requirement of obtaining a company seal and ensure that it is not required in practice (this recommendation can be addressed in the short-term but the impact, i.e. the full adoption by public and private sectors, might be medium-term)." (Memorandum, p. 12).

And what happened?

One year later, the Government adopted a conclusion on the abolition of the seal (May 4, 2016), but 13 years after the High Commercial Court (back in 2003) found that for a document to be legally valid, it must be signed by authorized persons, but not stamped. The reform measure of abolition of the seal is aimed at freeing beginner entrepreneurs of the financial and time commitment of obtaining the seal, but also at modernizing business communication by removing unnecessary activities.

With this Government's conclusion, companies and other business entities performing registered profit and non-profit activities do not have to use the seal, but they may, if they want to, i.e. there is no pressure to urgently change their statutes or founding documents. For example, the Act on Associations has been amended and associations no longer need to have a seal.

Aware of the international business practice, the Croatian Banking Association accepted this initiative, and banks adjusted their internal procedures regarding the abolition of the seal from operations during 2017. Croatian Post changed its internal procedures and no longer requires the use of the seal when delivering letters.

There are two important points of this Conclusion:

"The central state administration bodies are obliged to submit draft proposal to amend the regulation" …on the abolition of the obligation of the use of the seal… "to the Working Group for monitoring the implementation of the reform measure of the abolition of the use of the seal, within 15 days from the date of the adoption of this Conclusion." (Art. 2)

"The provisions of this Conclusion shall apply appropriately on legal entities established by the Republic of Croatia (agencies, institutes, funds, and other legal persons with public authority." (Art. 4)

249 regulations were analysed, and the provision on the use of the seal was abolished in 85. Two years later (April 2018), there are still 142 regulations for which the Agency for Investments and Competitiveness (responsible for the implementation of this Government's Conclusion) knows that they need to be changed, but there is no action by the competent institutions. For the remaining 22 regulations the analysis is ongoing. More on http://www.aik-invest.hr/konkurentnost/provedba-reformske-mjere-ukidanje-pecata/

If it is so hard to abolish the seal, how much time does it take to simplify the regulatory framework in which the economy operates?

All deviations in the application of this Government's Conclusion can be sent to pecat@vlada.hr

Government programs for entrepreneurship

Government programs for entrepreneurship (Table 40) are better rated than government policies towards entrepreneurship, but the ratings are still below the average of EU countries in all the years, show no tendency for improvement and are closer to the worst than to the EU average. One of the ten worst rated statements about entrepreneurial environment in (Table 52) refers to government programs for entrepreneurship (the use of government programs for entrepreneurship cannot be achieved through contact with only one agency), and it was also among the 15 worst-rated statements in previous years.

Table 40 Government programs, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	3.21	4.45	5.96	Luxembourg	2.82	Greece
2016	3.46	4.46	6.28	Austria	2.86	Greece
2017	3.6	4.55	6.04	Netherlands	3.24	Greece

Of the 54 countries included in the GEM study in 2017, the Netherlands has the highest rating for this component of entrepreneurial environment (6.04), and Iran the worst (2.08).

Entrepreneurship education

Education for entrepreneurial competencies has a high priority in EU policies, as a key component of building capacity for entrepreneurial behaviour, and is defined as a key lifelong competence[30]. Correlation between entrepreneurial activity and capability for entrepreneurial action is confirmed by the fact that more educated people are more often entrepreneurially active than the less educated (Table 28, Chapter 3).

With regard to contribution to the creation of entrepreneurial competencies, tertiary education (Table 42) is better rated than primary and secondary education (Table 41) in all observed years. Although such a relationship is characteristic for the EU, it is extremely worrying that in 2015 Croatia has the lowest ratings of the contribution of these two levels of education to the development of entrepreneurial capacity of young people in the EU, and again in 2017, tertiary level of education for entrepreneurial competencies is given the lowest rating in the group of EU countries involved in the GEM study. Among the lowest rated statements in the 2015-2017 period (Table 52) is the statement that primary and secondary education do not contribute to the development of entrepreneurial competencies and understanding of the market economy (the same was also true in the 2013-2014 period). The longevity of such drastic lagging behind the EU average imposes on Croatia the obligation to become thoroughly familiarized with the best practices of European benchmark countries for conception of education for the development of entrepreneurial competencies (especially the Netherlands, which maintains its leadership throughout the observed period, with a tendency to continuously increase the quality of this component of entrepreneurial environment).

Table 41 Entrepreneurship education – primary and secondary, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	1.89	3.42	5.6	Portugal	1.89	Croatia
2016	2.47	3.19	5.41	Netherlands	2.16	Hungary
2017	2.39	3.34	5.59	Netherlands	2.26	Poland

Of the 54 countries included in the GEM study in 2017, the Netherlands has the highest rating for this component of entrepreneurial environment (5.59), and Egypt the worst (1.76).

Croatia is far from the average of EU countries involved in the GEM study (it is closer to the worst ratings), and significantly far behind the best. The shift in the quality of this component of entrepreneurial environment is insignificant, the need for curricular reform is only talked about. While politics does not have solutions, initiatives are present both in schools (e.g. entrepreneurial minute in Economic and Trade School Čakovec) and in the economy (ŠuŠ in Hrvatske šume).

[30] RECOMMENDATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 on key competences for lifelong learning (2006/962/EC). In the Entrepreneurship 2020 Action Plan document from 2013, the European Union has defined two major initiatives to create a new generation of entrepreneurs in Europe (entrepreneurship education and development of culture of entrepreneurial activity).

EXAMPLE 7 EDUCATION FOR ENTREPRENEURIAL COMPETENCIES

Entrepreneurial Minute in teaching biology and chemistry in Economic and Trade School Čakovec

www.ets.hr

The Economic and Trade School Čakovec is nearing its 100th birthday (it was founded in 1921). In its long history, it has changed names and curricula, but has also developed an organizational culture imbued with creativity and innovation. Changes of curricula may have been difficult, but they have enriched the school with an understanding of the importance of interdisciplinary approach.

ENTREPRENEURIAL MINUTE whose author is Željka Kadi, teacher counsellor on subjects of biology and chemistry, opens the way for connecting different knowledge through student projects.

Since the 2014/2015 school year, every biology and chemistry lesson ends with "Entrepreneurial Minute". Students are encouraged to think how to apply acquired knowledge and skills as a potential opportunity to start their own business. Each student must present their entrepreneurial idea using a special form (name, product description, target market group, environmental / health impact). It usually takes a week or two since processing of new teaching content to form a business idea.

In designing such business ideas, cooperation of teachers of biology, chemistry, knowledge of goods, foreign languages, marketing, entrepreneurship, tourism, accounting, family business and training firm is realized.

And so, from minute to minute, they have started students' cooperative Terra Economica, developed numerous business ideas based on learning from biology and chemistry, which must meet three criteria: to have a positive impact on the environment and human health, contribute to solving the problems of their immediate environment and, of course, ensure business sustainability.

There were business ideas about spices (ZAZ – healthy alphabet of spices), cosmetic products (ZAK – healthy alphabet of cosmetics) based on lavender, immortelle, thyme and sage, produced in their own Fragrant Garden (which was built with the help of the Čakovec utility company ČAKOM, as a gift for the school's 95th anniversary), plantation cultivation of the forgotten spice plant summer savory, durability of bread, holly blue butterflies as a biological treasure of the Sv. Juraj na Bregu municipality…

With their research projects, students of biology and chemistry won the first three places at state festivals of young biologists in Croatia. With the research project "Measures to control Spanish slugs (Arion vulgaris)", 1st grade students Lucija Marković and Eva Perčić, with mentoring by teacher counsellor Željka Kadi, won the 1st place at the State Festival and competition of young biologists of Croatia, Kalinovac 2016. As representatives of the Republic of Croatia at the international competition INTERNATIONAL CONFERENCE OF YOUNG SCIENTISTS (ICYS) 2017 held in Stuttgart, in competition of 27 countries, with the same project, they won two international gold medals in the environmental sciences category, one for the presentation of the research project and the other for the poster.

Željka Kadi, the author of the Entrepreneurial Minute, says: "Our interdisciplinary team has great support of Principal Bosiljka Vinković-Kukolić (who is also the author of a textbook on entrepreneurship for economic schools), School Board, Teachers' Council and Međimurje County."

So, sometimes even one minute can make a positive change in an educational institution – if there is participation of professors with knowledge and enthusiasm, motivated students, school administration and parents who support such changes, and partner environment (local self-government, companies). And what would happen if educational reform made more room for such initiatives?

EXAMPLE 8 IT IS NEVER TO EARLY TO LEARN FROM THE REAL LIFE

ŠuŠ ("School in the forest, forest in the school")

Hrvatske šume and education for ecologically aware young people

For a number of years, individual subsidiaries of the public company Hrvatske šume LLC have been nurturing work with children. In 2012, these experiences were consolidated in the educational project "School in the forest, forest in the school", whose implementation in schools was approved by the Croatian Education and Teacher Training Agency, as well as by the Ministry of Science, Education and Sports. In the autumn of 2013, Hrvatske šume LLC started implementing the project with their own funds and personnel.

The aim of the project is to bring forestry closer to the youngest, and teach them how to deal with one of the most precious resources owned by the Republic of Croatia.

The project is aimed at primary school students who, through regular classes, learn about nature and its effects, the environment and homeland, and complement theoretical training acquired in the classroom through practical games and lectures in the forest. It is important to use interdisciplinary approach in familiarizing children of primary school age with the forest, life in the forest and the importance of forest management, and through it the work of foresters, and emphasize their importance in maintaining stable forest ecosystems.

The main objectives of the project are:

- Emphasizing the importance of preserving the environment and creating environmentally educated, aware and conscientious children as a pledge for the future
- Bringing forests and forestry profession closer to children
- Integrating knowledge acquired in the field, in the forest, into the overall educational process
- Getting acquainted with forest plants and animals
- Teaching children the importance of preventing fires and the consequences of fires
- Awareness that forest can be an inspiration for artistic and literary works (integration into the educational process)

The project is led by guest lecturers, forestry engineers with rich theoretical and practical knowledge in the field of nature conservation and forest cultivation.

The project has been exceptionally well received by primary schools, since the forest ecosystem is a very important part of teaching material. Moreover, during student visits to forests, natural science teachers have observed that they also need further professional training in the field of forestry. Thus, for example, graduated forestry engineers held a lecture for the biology teacher collegium of the Koprivnica-Križevci County on the vegetation and forest communities of the county and the health status of forests, so that teachers can better transfer knowledge about forests to their students.

Since the start of the project in 2012 until the end of 2016, approximately 13,000 children from about 100 kindergartens and primary schools participated in the project.

Such initiatives show the interest of both the educational system and the economy for learning in the context of current problems and interdisciplinarity. Rather than this being a standard that should be brought by curricular reform, we speak of such initiatives as good examples.

Table 42 Entrepreneurship education – tertiary, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	3.53	4.53	5.61	Netherlands	3.53	Croatia
2016	3.83	4.56	5.85	Netherlands	3.33	Poland
2017	3.69	4.67	6.18	Netherlands	3.69	Croatia

Of the 54 countries included in the GEM study in 2017, Switzerland has the highest rating for this component of entrepreneurial environment (6.29), and Egypt the worst (3.37).

EXAMPLE 9 TRIPLE HELIX IN ACTION

University of Rijeka
Entrepreneurial university: university of the future or heresy?

Snježana Prijić Samaržija, Rector of the University of Rijeka

Autonomy, social responsibility, third mission, Triple Helix, enterprising university, service to community... these words are the backbone of the university of today and the university of tomorrow, third- or even fourth-generation university.

These words are also found in the University of Rijeka's strategic development documents since 2007 (The University of Rijeka Development Strategy 2007-2013, The University of Rijeka Development Strategy 2014-2020), but are also the backbone of the program with which Snježana Prijić Samaržija, PhD was elected rector in the 2017-2021 term. Strategic documents of the University of Rijeka insist on research excellence, especially in the fields of biotechnology, nanotechnology, information and communication technologies, and socio-cultural transition from industrial society to knowledge society, then on educational programs based on research and the needs of the society, and on connection with the economy. Thereat, words entrepreneurship and innovation appear in all the documents, with a visible evolution towards the 3rd generation university. The degree to which these advances of the University of Rijeka are pioneering is confirmed by the fact that the OECD only in 2012 made a guide (A Guiding Framework for Entrepreneurial Universities) on how to achieve transformation towards university as a responsible subsystem of the innovation ecosystem. It seems that only the University of Rijeka takes this into account.

How does university become proactive / innovative / dedicated to excellence and development of all the stakeholders: profession, local community...?

Strategic consistency over a longer period of time and insisting on interrelationship between research, education based on research findings and responsibility for the development of the environment in which the university operates, contributed to the recognition of the University of Rijeka as innovative and enterprising, university which creates Triple Helix in which social responsibility for the quality of life obligates the university, local self-government / state and the business sector to cooperate.

This is confirmed by the programmatic platform of rector Snježana Prijić Samaržija, which particularly emphasizes the vision of the Rijeka University as a university of the 3rd generation. Definition of 3rd generation university speaks of university whose organizational culture and structure are based on entrepreneurial paradigm (that is, proactivity, innovation and responsibility). Rector Prijić Samaržija does not stop at the vision only, but also provides highly detailed activities and objective achievement indicators. Several activities need to be singled out, because they best describe the change of organizational culture and strengthening entrepreneurial paradigm:

- ***Independent evaluation of the state of organization's efficiency and financial management at the beginning of the mandate***– without which the process of achieving the set goals cannot be monitored,
- Establishing ***participatory and informed decision-making*** – contributes to the quality of decision-making at Senate level,
- ***international scientific council – c***ontributes to learning from the best and strengthens the internationalisation of the university,

- Inclusion in the ***HEInnovate*** initiative (joint project of the OECD and the European Commission) – enables self-assessment of innovation potential of the higher education institution and determination of strategic and operational interventions in organizational structure and culture,
- Fund for the promotion of entrepreneurship and partnership with the economy, which will achieve its objectives through a ***program of interest-free entrepreneurial loans and equity investments in business ventures commercializing research results of the university,***
- Introducing the ***"Socially responsible Entrepreneurship"*** course for all students of the University.

With the development of intersectoral bodies within the university that are open to cooperation with research and economic partners from Croatia and the world, the Science and Technology Park of the University of Rijeka (Step RI) and the campus, programmatic platform of rector Prijić Samaržija for the 2017-2021 period is a new step forward with which the University of Rijeka is becoming even more actively involved in international activities and discussions about the university of the future and the future of the university.

These are very ambitious goals and tasks, which differ significantly from usual university activities. What facilitates and what hinders the implementation of this platform?

Implementation of this platform is facilitated by trends in EU policies that are unambiguously focused on encouraging social responsibility of universities towards the community, which, among other things, includes technology transfer, knowledge transfer and supporting linking research and development. Hindering are the circumstances in Croatia that slow down the implementation of these policies, primarily related to fragmentation of universities, but also the lack of effective mechanisms that will sensitize and motivate researchers and students to open, innovative and entrepreneurial behaviour. I believe that another facilitating circumstance for the University of Rijeka is the fact that we have exceptionally successful representatives of the economy and the local community in the University Council, a total of 5 out of 12, which is why we never lose perspective of the need to cooperate.

Do you have the appropriate team to accomplish these tasks?

The fact that I was elected rector with such a program is a confirmation that the whole university is a team for the implementation of these goals and tasks. The immediate rector team has been expanded with 3 new associates: rector's assistant for technology transfer and entrepreneurship support, advisor for innovation and technology transfer, and advisor for relations with the local community and economy. We have formed the Expert Council for Financial Operations and Business Cooperation, whose members are representatives of management of all university constituents, with the aim to disseminate information and policies more effectively, as well as to enable participative decision-making. Boris Golob, director of the Science and Technology Park, holds a very important position at the University, but also in this body.

You have been involved in the preparation of both strategic development documents of the University of Rijeka – have you ever had a dilemma about the direction of the university development towards enterprising and innovative? There are still comments appearing on how an enterprising university sells it soul, autonomy, if it is commercialized.

There is a constant conflict between two ideologies or two ways of understanding the role of university in our academic community. According to some, universities should contribute to national competitiveness, while according to others they should be separated from the economy in order to preserve their autonomy. I personally believe that both sides are right and that there is no real conflict. University must be autonomous in terms of freedom of research and critical thinking, but in its research and in synergy with the community it should contribute to its development and quality of life. I don't see how contributing to the community can undermine university autonomy. Of course, abuses of the system are always possible, but this must never stop our efforts to behave socially responsible and contribute to the community.

You are a philosopher, and your predecessors were Pero Lučin, PhD and Academician Daniel Rukavina, both doctors. How do you interpret that – is it a coincidence or does it speak about "entrepreneurship without borders"?

I would not say that this is a coincidence – it only shows that being enterprising and innovative is not limited to a profession, but an obligation and a privilege of all who take the responsibility for identifying and solving problems primarily of the environment in which they operate, and beyond.

Rector Snježana Prijić Samaržija's work program
http://www.uniri.hr/files/staticki_dio/rektorat/Program%20rada%202017_2021_SPS.pdf

Transfer of research and development

The innovative capacity of businesses, and hence their competitiveness, depends on the effective transfer of knowledge from research institutions to business practice (Table 43). According to the quality of this component, in 2015 and 2016 Croatia was the worst of all the EU countries involved in the GEM study, and in 2017 it was not far from the worst ranked country.

Table 43 Transfer of research and development, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	2.85	4.05	5.38	Luxembourg	2.85	Croatia
2016	2.73	4.14	5.29	Netherlands	2.73	Croatia
2017	3.29	4.16	5.29	Netherlands	3.09	Slovakia

Of the 54 countries included in the GEM study in 2017, Switzerland has the highest rating for this component of entrepreneurship ecosystem (5.72), and Iran the worst (2.58). The Swiss concept of transfer of research and development was also rated the best in 2015 (6.22).

Expert assessment of the restrictive effect of this component of the entrepreneurship ecosystem on the entrepreneurial capacity of the Croatian economy only confirms the opinion of surveyed adult population about innovative capacities of start-up" and "established" business ventures. Although businesses in Croatia are technologically better equipped than the average of EU countries (Table 13 and Table 14, Chapter 2), they are far from the best in the EU according to innovativeness of products (Table 15 and Table 16). The inability of businesses to use investments in technology to strengthen their competitiveness (primarily through innovation of the product portfolio) requires project cooperation between research and business sectors. Only in this way will capitalization of investments in technological equipment of businesses be realized, thereby strengthening the base of growing businesses.

The ineffectiveness of this component of Croatia's entrepreneurial environment is evident throughout the entire period of Croatia's participation in the GEM study (since 2002). In all the years, transfer of research and development is restricting, rather than stimulating for entrepreneurial activity in Croatia. In 2017, ratings of all dimensions through which the quality of the process of knowledge transfer is observed are slightly better than in previous years, but far from moving towards the EU average, and even farther from transition to the status of a stimulating component of entrepreneurial environment (rating 5 or higher) (Table 44).

Table 44 Transfer of research and development – average ratings of individual statements describing this component of entrepreneurial environment, Croatia

Statement	2015.	2016.	2017.
Knowledge about new technologies, scientific achievements and other knowledge are efficiently transferred from university and research centres to new and growing businesses.	2.58	2.6	3.05
New and growing businesses have equal access to new technology and research as large businesses.	2.62	2.51	3.3
New and growing businesses can afford the latest technology.	2.69	2.6	3
There is adequate financial support from the government that enables small and growing businesses to acquire new technology.	3.59	3.36	3.63
Scientific and technological infrastructure efficiently supports the creation of world-class technology-intensive business ventures in at least one area.	2.74	2.79	3.03
There is adequate support available to engineers and scientists to facilitate the commercialisation of their ideas through new and growing businesses.	2.84	2.59	3.33

Insight into the structure of this component of entrepreneurship ecosystem only confirms that transfer of research findings to the business sector is an important prerequisite for creating competitive, and thus also growing businesses. In Chapter 2 it was noted that Croatia has a very thin base of "established" businesses (Table 10), which greatly narrows the potential for generating fast-growing businesses. In addition, to strengthen the share of fast-growing businesses, it is necessary to provide knowledge and support for transforming investments in technological equipment (Tables 13 and 14) into innovative, competitive products (Tables 15 and 16). With interventions in all the shown dimensions of transfer of research and development (through long-term consistent policies in the fields of science, education and innovation funding), it is possible to get out of this negative spiral and swim out of the "red ocean" market.

Professional and commercial infrastructure

Professional and commercial infrastructure includes institutions that provide business services in building capacity for entrepreneurial activity (from training to consulting for business venture start-up and growth, from connecting with investors to development of projects) (Table 45). In all observed years, Croatia has below-average ratings for the quality of this component of entrepreneurial environment u in relation to EU countries, and in 2015 and in 2016 it was the country with the worst rating. Significant investment of Croatia into institutional development of this infrastructure (centres for entrepreneurship, entrepreneurial zones, development agencies, incubators...) obviously did not result in quality services. The results of the GEM study have for quite some time been pointing to the necessity of a thorough analysis of the current approach of government programs towards this component of entrepreneurial environment, because extensive institutional presence is not a guarantee of adequacy and quality of services.

In order to achieve competitiveness, businesses need conditions for inclusion in value chains (such as quality subcontractors and suppliers), and this dimension of professional and commercial infrastructure is rated the worst, without tendency for improvement: 3.98 in 2015, 3.47 in 2016 and 3.78 in 2017.

Table 45 Professional and commercial infrastructure, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	4.29	5.21	6.23	Belgium	4.29	Croatia
2016	4.23	5.19	6.11	Latvia	4.23	Croatia
2017	4.66	5.19	6.21	Netherlands	4.5	Italy

Of the 54 countries included in the GEM study in 2017, the Netherlands has the highest rating for this component of entrepreneurship ecosystem (6.21), and Iran the worst (1.9).

Openness of the domestic market

The GEM study monitors the openness of the domestic market through two aspects: dynamics of change and intensity of barriers. In the 2015-2017 period, Croatia continues to show very stable differences between the above-average rating for dynamics (Table 46) and the below-average rating for markets without barriers[31] (Table 47). Market dynamics generates opportunities for starting business ventures and investing, and an above-average rating of this component of entrepreneurial environment is an important prerequisite for stimulating entrepreneurial activity.

The longevity of the market barriers problem (Croatia has had this component rated as the worst in the group of EU countries not only in all three observed years, but also in the 2012-2014 period) is connected to ratings of government policies towards speed and ease of regulatory functioning (Table 38), according to which Croatia is the worst among the EU countries that participated in the GEM study during that six-year period. As a result, numerous business opportunities that could have been realized through domestic and foreign investments were lost. Unfair business practices of existing businesses are particularly emphasized in the 2015-2017 period

[31] Statements that describe a market without barriers are: ability of new and growing businesses to overcome barriers to market entry, and exercising the right to fair market competition.

as the most important barrier to entry of new and growing businesses into the domestic market. Responsibility for ignoring the problem of complicated regulatory environment that limits the openness of the domestic market is also confirmed by other research, such as studies on ease of doing business (World Bank), on competitiveness (World Economic Forum), on corruption (Transparency International).

Table 46 Openness of the domestic market – dynamics of change, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	6.08	4.87	6.36	Poland	3.58	Bulgaria
2016	5.48	4.83	6.25	Poland	3.63	Portugal
2017	5.79	4.79	6.6	Poland	3.51	Luxembourg

Of the 54 countries included in the GEM study in 2017, China has the highest rating for this component of entrepreneurial environment (7.13), and Uruguay the worst (2.91).

Table 47 Openness of the domestic market – entry barriers, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	3.03	4.49	6	Netherlands	3.03	Croatia
2016	3.26	4.57	6.17	Netherlands	3.26	Croatia
2017	3.16	4.42	6.1	Netherlands	3.16	Croatia

Of the 54 countries included in the GEM study in 2017, the Netherlands has the highest rating for this component of entrepreneurial environment (6.1), which also had the best ratings in 2015 and 2016, and Iran the worst (2.1).

Physical infrastructure

Physical infrastructure is an important component of entrepreneurial environment on which the ability to transform an idea into a business venture depends to a large extent, as well as the development of a business venture, because it provides access to markets and basic resources (water, electricity, natural gas...). The GEM study monitors the quality of physical infrastructure through various subcomponents, from traffic, utilities to telecommunications. With ratings above 5, physical infrastructure (Table 48) is the best rated component of entrepreneurial environment, and with its quality and availability acts supportively to entrepreneurial activity in Croatia. However, the fact that even with these high ratings, the quality of this component of entrepreneurial environment is still only at the level of the average of EU countries or slightly below, shows that there is room for improvement.

Table 48 Access to physical infrastructure, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	6.46	6.34	7.61	Finland	3.53	Portugal
2016	6.21	6.76	8	Estonia	5.14	Italy
2017	5.94	6.62	7.81	Netherlands	5.39	Italy

Of the 54 countries included in the GEM study in 2017, the Netherlands has the highest rating for this component of entrepreneurship ecosystem (7.81), and Madagascar the worst (4.39).

Cultural and social norms

The action of individuals and institutions in a society is determined by the system of values that is based on cultural and social norms. The GEM conceptual framework defines cultural and social norms through the dimensions of self-determination, initiative, responsibility for choice (capacity to assume risk) and innovation.

Everything that happens in society has its base in cultural and social norms, including shaping entrepreneurial environment and personal entrepreneurial behaviour.

Changes in cultural and social norms are the most complex, from which it follows that they are very time demanding. This is also shown by the stability of ratings, not only in Croatia but also in the average of EU countries (Table 49). The fact that in all the observed years from 2015 to 2017 (but also in 2012 and 2014), Croatia has the lowest ratings for this component of entrepreneurial environment warns that no changes are observed in the 6-year period. Significant lagging behind the EU average shows that cultural and social norms in Croatia represent a serious constraint in building the country's entrepreneurial capacity. If changes are to be made, then focused, long-term and mutually consistent strategies, complementary policies, and cooperation between numerous actors in these processes (education, government, business sector, civil sector) are needed.

Table 49 Cultural and social norms, Croatia and EU countries

Year	Croatia	EU	Best		Worst	
2015	2.63	4.29	5.73	Estonia	2.63	Croatia
2016	2.95	4.23	6.42	Estonia	2.95	Croatia
2017	2.96	4.52	6.66	Netherlands	2.96	Croatia

Of the 54 countries included in the GEM study in 2017, Israel has the highest rating for this component of entrepreneurial environment (7.22), which was also the best in 2015 with rating 4.4, and Croatia has the worst rating (2.96).

Efficiency of the entrepreneurial environment

Entrepreneurial activity is always the result of the interaction of the individual / group of people with the environment, which can have a stimulating or restricting effect. How will entrepreneurial environment affect entrepreneurial activity depends on the capacity for coordinated action of all components of the system. To achieve this, coordinated national policies in building each component and their effective networking are necessary. The starting point for such interventions is understanding of the systemic characteristics of the entrepreneurial environment and quality dimensions of each individual component. The capacity of the integrative effect of the interconnectedness of the components of entrepreneurial environment is determined by the quality of the weakest component. Because of this, information about the quality of individual components enables government policy makers, financial, educational and research institutions, as well as the business sector, to intervene in order to improve the quality of individual components and their mutual alignment.

Expert ratings of all components of entrepreneurial environment in the 2015-2017 period (Table 50) indicate the stability of these ratings at, as a rule, a very low level.

Table 50 Perception of quality of entrepreneurial environment in Croatia, 2015-2017

		Access to money	Government policies – priorities, support	Government policies – taxes and regulations	Government programs	Entrepreneurship education – primary and secondary	Entrepreneurship education – tertiary	Transfer of research and development	Professional and commercial infrastructure	Openness of the market – dynamics of change	Openness of the market – entry barriers	Physical infrastructure	Cultural and social norms
2015	Croatia	3.3	2.84	1.99	3.21	1.89	3.53	2.85	4.29	6.08	3.03	6.46	2.63
2016	Croatia	3.79	2.8	2.18	3.46	2.47	3.83	2.73	4.23	5.48	3.26	6.21	2.95
2017	Croatia	4.02	3.26	2.14	3.6	2.39	3.69	3.29	4.66	5.79	3.16	5.94	2.96

Only two components (physical infrastructure and dynamics of change in the local market) have a stimulating effect on entrepreneurial activity (ratings above 5)[32]. All the other components are rated lower than 5, indicating their restrictive effects – government policies, entrepreneurship education at primary and secondary level and transfer of research and development have particularly low ratings. Six components (government policies towards taxes and regulations, entrepreneurship education at tertiary level, transfer of research and development, professional and commercial infrastructure, market barriers and cultural and social norms) had the lowest ratings in the group of EU countries that participated in the GEM study in the observed period. The importance of comparisons is shown is shown by a relatively high rating of professional and commercial infrastructure (above 4), but if that component is rated significantly better in other countries, than this means that investing in the development of such infrastructure (centres for entrepreneurship, entrepreneurial zones, regional development agencies...) insufficiently contributes to the development of quality services that more effectively stimulate entrepreneurial activity.

Since each component of entrepreneurial environment is constructed by combining several subcomponents / statements, it is possible to gain a better insight into the reasons for falling behind in quality of some component of entrepreneurial environment from the analysis of ratings of individual statements. Table 51 shows the highest rated statements about entrepreneurial environment in Croatia, while Table 52 shows the lowest rated statements. Data for the 2015-2017 period was used in this analysis, in order to emphasize the longevity of characteristics of individual best or worst component of entrepreneurial environment.

Table 51 Highest rated statements about entrepreneurial environment in Croatia, 2015-2017, rating 1 – complete disagreement with the statement, rating 9 – complete agreement with the statement

Component of entrepreneurial environment	Statement	Rating
Physical infrastructure	A new or a growing business can open a telephone line or get internet access in about a week.	2015: 7.78 2016: 7.05 2017: 7.1
Physical infrastructure	For a new or a growing business, it is not too expensive to get good access to communication networks (telephone, internet, etc.).	2015: 6.98 2016: 6.7 2017: 6.62
Physical infrastructure	Physical infrastructure (roads, utilities, communications, waste disposal) provides good support to new and growing businesses.	2015: 6.48 2016: 5.98 2017: 5.8
Physical infrastructure	New and growing businesses can afford the cost of basic utilities (gas, water, electricity, sewage).	2015: 5.43 2016: 5.73 2017: 5.67
Openness of the domestic market – dynamics of change	Market of goods and services intended for final consumers changes dramatically from year to year.	2015: 6.1 2016: 5.6 2017: 5.98
Openness of the domestic market – dynamics of change	Market of goods and services intended for the business sector (businesses) changes dramatically from year to year.	2015: 6.1 2017: 5.63
Commercial and professional infrastructure	It is easy to get good banking services for new and growing businesses (current accounts, foreign exchange transactions, letters of credit, etc.)	2015: 5.41 2016: 5.5 2017: 5.63
Commercial and professional infrastructure	There is a sufficient number of subcontractors, suppliers and consultants to support new and growing businesses.	2017: 5.18
Government programs	Scientific parks and business incubators provide effective help to new and growing businesses.	2017: 5.2
Access to money	Government incentives are available to new and growing businesses.	2017: 5.03

[32] Ratings are the result of applying the scale of 1 to 9, where rating 5 is the separator to those components with ratings below 5 that are restrictive to entrepreneurial activity, and ratings above 5 point to components that contribute to stimulating entrepreneurial activity.

Table 52 Lowest rated statements about entrepreneurial environment in Croatia, 2015-2017, rating 1 – complete disagreement with the statement, rating 9 – complete agreement with the statement

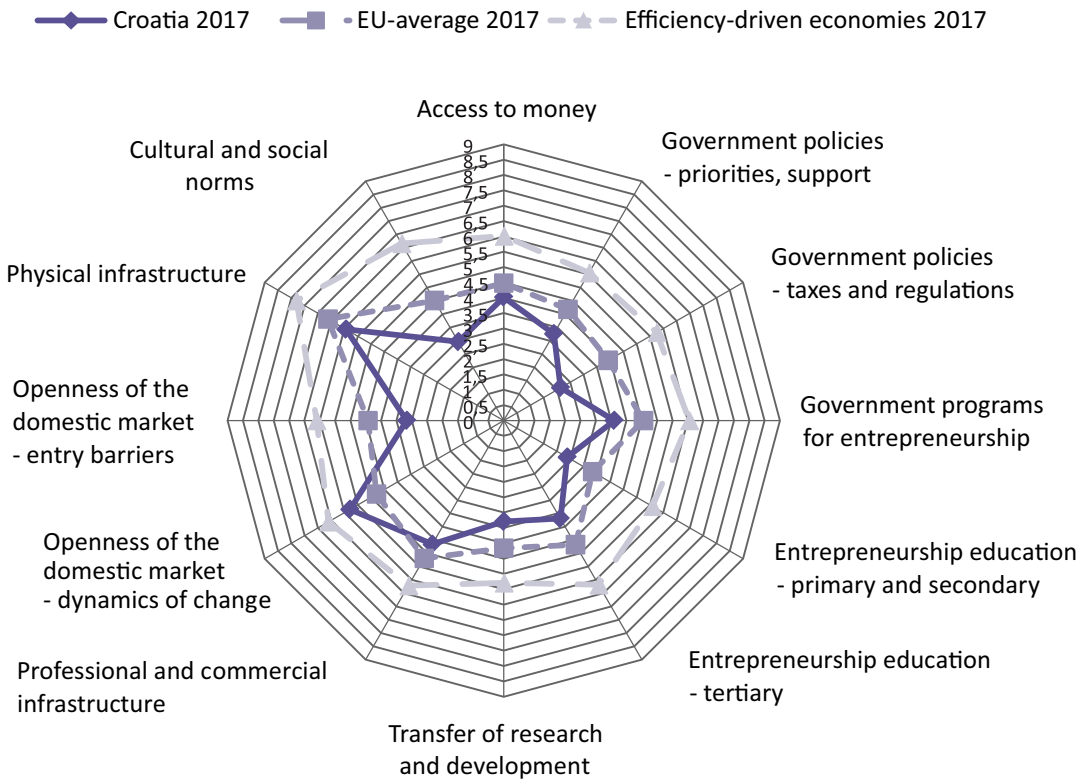
Component of entrepreneurial environment	Statement	Rating
Government policies – taxes and regulations	It is not too difficult for new and growing businesses to deal with bureaucracy, legal and regulatory requirements.	2015: 1.59 2016: 2.03 2017: 1.95
Government policies – taxes and regulations	Level of tax obligations is NOT a burden for new and growing businesses.	2015: 1.68 2016: 1.88 2017: 2.31
Entrepreneurship education – primary and secondary	Primary and secondary school education devotes adequate attention to entrepreneurship and starting new businesses.	2015: 1.74 2016: 2.28 2017: 2.31
Government policies – priorities, support	Government measures and policies (e.g. public procurement) systematically give preference to new businesses.	2015: 2.03 2016: 2.03
Government policies – taxes and regulations	New businesses can obtain all the permits and certificates within a week.	2015: 2.46 2016: 2.53 2017: 1.93
Government policies – taxes and regulations	Tax and other government regulations applies to new and growing businesses in a predictable and consistent manner.	2015: 2.41 2016: 2.38 2017: 2.53
Government programs	A wide range of government assistance measures for new and growing businesses can be obtained by contacting only one agency.	2015: 2.4
Cultural and social norms	National culture encourages entrepreneurial risk-taking.	2015: 2.2 2016: 2.53 2017: 2.64
Transfer of research and development	New and growing businesses have equal access to new technology and research as large businesses.	2016:2.51
Openness of the domestic market – entry barriers	New and growing businesses can enter markets without the risk that the existing businesses will try to prevent them doing so through unfair competition.	2017: 2.8

The longevity of the lowest rated statements about entrepreneurial environment in Croatia in the 2015-2017 period warns of the responsibility for omission (e.g. why government measures and policies do not provide systematic support to growing businesses, why new businesses are discriminated against in the sphere of public procurement, why for years nothing has been done to simplify the regulatory environment, why primary and secondary education do not contribute to the development of entrepreneurial competencies, etc.).

In order to emphasize the need for urgent intervention in the quality of individual components of entrepreneurial environment, Figure 14 shows the ratings of entrepreneurial environment in 2017 for Croatia, EU countries that participated in the GEM study, and the best ratings of individual components, regardless of the country they belong to:

- Access to money — Netherlands 6.01
- Government policies – priorities, support — France 5.56
- Government policies – taxes and regulations — Netherlands 5.75
- Government programs — Netherlands 6.04
- Entrepreneurship education – primary and secondary — Netherlands 5.59
- Entrepreneurship education – tertiary — Netherlands 6.18
- Transfer of research and development — Netherlands 6.21
- Professional and commercial infrastructure — Netherlands 5.29
- Openness of the market – dynamics of change — Poland 6.6
- Openness of the market – entry barriers — Netherlands 6.1
- Physical infrastructure — Netherlands 7.81
- Cultural and social norms — Netherlands 6.66

Figure 14 Experts' ratings of the quality of entrepreneurial environment in Croatia, 2017 – comparison with the EU average and the best ratings in EU countries



Distance from the best rated dimensions of entrepreneurial environment is an incentive for all EU countries, because each country can see that it is possible to do better. Comparison of the ratings of quality of individual components of Croatia and the best in the EU even more emphasizes the problem of insufficiently stimulating entrepreneurial environment for domestic and foreign investment in Croatia.

5 Development and application of growth potential prediction models for small and medium enterprises

(results of the project financed by the Croatian Science Foundation, 2014-2018)[33]

Researchers: Nataša Šarlija, Slavica Singer, Sanja Pfeifer, Marina Stanić, Ana Bilandžić, Sunčica Oberman-Peterka, Anamarija Dalić, Danijel Grahovac

The role of growing, and especially of fast-growing enterprises in new job creation has recently become an important topic of economic research due to very pronounced asymmetry: the number and share of fast-growing enterprises in the economic structure is relatively small, but the number and share of jobs they create is disproportionally large. In principle, all enterprises could grow, but it depends on whether they have the potential for it and whether they want to, and if they do not have the potential to grow, whether they want to build it. Accordingly, the most important actors in the development of the segment of fast-growing enterprises are the owner and the enterprise. The state is also an important participant in this process, but through creating an entrepreneurial environment that supports such decisions at the level of the owner / enterprise.

The project 'Development and application of growth potential prediction models for small and medium enterprises' is a continuation of earlier studies[34], as well as extension of GEM research in the field of growing enterprises[35]. By incorporating the research results of this project into the publication presenting the results of the GEM study for 2017, the basis for identifying patterns of presence of growing enterprises in the economy is expanded (with regard to activity, region, characteristics of the owner and the enterprise).

[33] Web pages of the project: http://www.efos.unios.hr/development-and-application-of-growth-potential-prediction-models/ http://www.potento.eu/

[34] Research program Entrepreneurship – mobilizer of social integration (program manager: Singer, S.), financed by the Ministry of Science, 2006-2010, consisted of 5 projects: Assessing the growth potential of small and medium enterprises; Operational business risk assessment models; Transformation of entrepreneurial potential into entrepreneurial behaviour; Achieving economic prosperity by strengthening regional competitiveness; Statistical measurement instruments: construction and adaptation in entrepreneurial economy.

[35] Questions from the GEM questionnaire for adult population that relate to growing enterprises were used in the development of the survey tool.

Goal of the project

The goal of the project was to assess the growth potential of any enterprise at the very early stage, i.e. before the enterprise starts to grow. Recognizing growth potential at such an early stage is useful for the enterprise, for potential investors, but also for the state: the enterprise can shape its business strategy by preparing for growth, potential investors can make less risky investment decisions, and the state may adopt various policies (tax, education, innovation) to create a stimulating environment for such enterprises.

Two sub-goals of the project are:

1. Development and testing of growth potential prediction models for small and medium enterprises in Croatia. In the implementation of this sub-goal, the following activities were undertaken:

- Analysis of previous research on growing enterprises,
- Development of growth potential prediction models for small and medium enterprises in Croatia,
- Analysis of growth potential of enterprises in Croatia,
- Comparison of growth potential with regard to activity and regions in Croatia,
- Making growth potential prediction models via web service (www.potento.eu).

2. Creating recommendations for stimulating growing / fast-growing enterprises, intended for enterprises (for designing business strategies for growth), educational institutions (for inclusion of problems of growing enterprises in educational content), state institutions (which can create policies for development of enterprises with growth potential), and financial institutions and investors that can offer customised financing and investment conditions to enterprises with high growth potential.

What affects enterprise growth?

Previous studies show that enterprise growth is affected by numerous factors that can be classified into 3 categories: factors on the side of entrepreneurs / enterprise owners, factors on the side of enterprise and factors on the side of environment:

- Entrepreneurs: high motivation for achievement, desire for growth, willingness to take risks, ability to learn…
- Enterprise: organizational culture – innovation, strategic orientation towards growth, high specialisation, orientation towards achievement of goals; organizational readiness,
- Environment: supporting to growing enterprises – regulatory framework, access to sources of financing, educational programs, innovation policy (intellectual property, cooperation between research institutions and enterprises).

Studies on enterprise growth more often examine the impact of individual factors on growth, and fewer studies focus on the development of empirical or conceptual models by integrating different factors that impact growth. When analysing previous research, it is necessary to take into account the definition of growing enterprise that was used (growing, fast-growing, gazelles). In the literature review, where possible, these distinctions were identified.

Characteristics of entrepreneurs / enterprise owners and enterprise growth

Age, gender, education, experience and personal characteristics are the most important determinants of growth on the side of enterprise owners. Studies show that there is a difference between enterprises with growth potential with regard to the ***gender*** of the owner (Singer, Šarlija, Pfeifer, Oberman Peterka, 2017). Enterprises that grow more are owned by men, compared to enterprises whose owners are women (Cooper, Gimeno-Gascon, Woo, 1994).

Growth and ***age*** of enterprise owners are negatively correlated (Welter, 2001), while the ***level of education*** (Kolvereid, Bullvag, 1996; Pena, 2002) and industry ***experience*** are positively correlated (Klepper, 2001) with enterprise growth. Lee and Tsang (2001) have shown that entrepreneurs' industry experience and managerial

experience have a dominant positive effect on enterprise growth. They have also shown that ***networking*** activities, number of partners and ***internal locus of control*** have a positive impact on enterprise growth.

Levie and Autio (2013) have shown that a higher degree of ***propensity for taking risks*** increases growth potential, while some other studies (Palich, Bagbay, 1995) failed to confirm the existence of a significant connection between growth and risk-taking propensity.

Owners' motivation for enterprise growth is also an important growth factor. The higher the motivation, the higher the growth potential (Kolvereid, Bullvag, 1996; Delmar, 1996; Pena, 2002). The same has been confirmed for the ***need for achievement*** (Levie, Autio, 2013; Lau, Busenitz, 2001; Lee, Tsang, 2001). Baum (1994) has shown that ***self-efficacy*** has a strong positive correlation with enterprise growth. Wiklund, Patzelt and Shepherd (2009) have shown that entrepreneurial orientation and attitude towards growth have a direct positive impact on enterprise growth.

Baron and Tang (2008) have confirmed that owners' ***social skills*** play an important role in the financial success of an entrepreneurial venture. Janczak and Bares (2010) stressed the importance of a clear vision. Higher growth is achieved by the so-called visionary entrepreneurs.

Enterprise characteristics and enterprise growth

Among the determinants of growth on the side of enterprise, the most frequently mentioned in literature are: enterprise age, size, human capital, level of investment in research and development, innovation, organizational learning, entrepreneurial orientation and financial structure of enterprise.

There is a negative correlation between growth ***and age of enterprise*** (Yasuda, 2005; Geroski, Gugler, 2004), as well as between growth and enterprise size (Yasuda, 2005).

Studies have shown that ***human capital*** directly affects innovation and processes, which then ultimately affects company performance (Wang, Chang, 2005; Šarlija, Stanić, 2017). Pena (2002) has confirmed a positive correlation between company performance and human capital (education, business experience, motivation), organizational capital (enterprise flexibility and ability to successfully implement strategies) and relational capital (development of a productive business network, access to relevant stakeholders).

Diaz Hermelo and Vassolo (2007) have shown that ***company's aspiration towards growth***, state incentive programs, new technologies, orientation to international markets and availability of financial resources are growth factors. The level of research and development (McGee, Dowling, 1994), innovation (Fischer, Reuber, Hababou, Lee, 1997), organizational learning (Hult, Snow, Kandemir, 2003) and entrepreneurial orientation (Wiklund, Shepard, Patzelt, 2009) are in positive correlation with enterprise growth. In their research of growth determinants of small and medium enterprises, Helmers and Rogers (2011) concluded that the most important determinant for growth is the ability to invest, particularly in research and development.

Moreno and Casillas (2007) have shown that fast-growing enterprises are characterised by a reduced availability of financial resources that preceded in the years before growth.

Becchetti and Trovato (2002) have shown that availability of ***external sources of financing*** and internationalisation are positively correlated with enterprise growth. Studies show that assets, indebtedness, liquidity, internally generated resources, productivity and opportunities for future growth are significant factors that determine the potential for growth (Mateev, Anastasov, 2010; Jeger, Šarlija, Bilandžić, 2016). Sampagnaro (2013) has identified cash flow as the most important factor for enterprise growth.

There are different opinions about the influence of external sources of financing: Sampagnaro (2013) states that there is an unambiguous tendency that external sources of financing negatively affect growth, while some studies have shown that there is a positive relationship between external sources of financing and growth of small and medium enterprises (Storey, 1994; Cooper, Gimeno-Gascon, Woo, 1994).

Innovation is an often investigated growth factor. The success of several well-known high-tech companies has shown that innovation was the key determinant of their growth. Results of research carried out by Coad and Rao (2007) show the existence of a positive relationship between innovation and sales growth, but only for fast-growing enterprises. Namely, they have not found a significant connection between such growth and innovation for enterprises with average growth. Interesting conclusions were reached by Demirel and Mazzu-

cato (2012), who investigated the impact of research and development on growth depending on whether a company has at least one patent or has been successfully patenting successively for the last 5 years. They have shown that research and development has a positive effect on growth of small enterprises if they have either had one patent or have been successful in patenting in the last 5 years, but that there is no connection between growth and investment in research and development if the enterprise does not have a single patent. For large enterprises, they have shown that investment in research and development has a negative impact on sales growth regardless of patents, while for those enterprises that do not have patents, they have found no connection between growth and investment.

Innovation is often associated with other characteristics, thus, for example, Love and Roper (2015) explore the link between ***exports and innovation***. Although they have found a positive link between growth and innovation, they conclude that without internationalisation and exports there are no significant benefits for business. This is in line with the 2010 EU report 'Internationalisation of European SMEs', which shows that small and medium enterprises grow twice as fast if they export and that internationally active small and medium enterprises have a three times greater chance to create a new product or service. Stam and Wennberg (2009) have shown that investment in research and development is important for high-tech companies, while ambition for growth is more important for low-tech companies. Research by Hölzl (2009), Mason, Bishop, Robinson (2009) and Grundström, Sjöström, Uddenberg, Öhrwall Rönnbäck (2012) has confirmed that innovative enterprises tend to grow faster than non-innovative enterprises. Coad, Segarra and Teruel (2015) have shown that for young enterprises investment in research and development has a positive impact on growth, while investment for older enterprises shows a stable or even diminishing impact. Šarlija and Bilandžić (2018) have shown that there is no direct link between innovation and growth in Croatia, but that innovative enterprises have higher exports and profit margin and that they use newer technology and have products that are new to their customers.

Environment and enterprise growth

Wiklund, Shepard and Patzelt (2009) speak of ***dynamic*** environment that provides opportunity for growth, ***hostile*** environment that hinders growth, and ***heterogeneity*** of the environment, which encourages growth.

There are environmental factors that stimulate growth and those that limit growth. Wiklund, Shepard and Patzelt (2009) state that changes in society, politics, market and technology create opportunities for growth. Among the barriers that slow down growth, there are financial, technological, institutional, organizational and market barriers.

Financial barriers relate to the lack of external financing and capital (Becchetti, Trovato, 2002). Hindered access to the latest technology also can reduce growth potential. Taxes, government policies and administration represent institutional barriers (Davidsson, Henreksson, 2002).

How to measure enterprise growth?

From a methodological point of view, enterprise growth can be measured quantitatively in terms of generating physical output or expansion of business volume, and qualitatively in terms of product quality or market position.

The most common quantitative measures used to define growth are increase of employees, sales, revenues and assets (Davidsson, Steffens, Fitzsimmons, 2009; Šarlija, Pfeifer, Jeger, Bilandžić, 2016). Other measures that can be found in previous research relate to market share, profit, capacity and capital, using absolute and relative measures as well as varying lengths of time of monitoring of growth (Shepherd, Wiklund, 2009).

In the conducted study of growing enterprises in Croatia, measures of increase of employees, sales, total revenues and assets were used. Growth of enterprises was monitored over 3 consecutive years in the 2012-2015 period, following the OECD definition of fast-growing enterprises: annual growth of 20% or more over a three-year period. This definition was used to determine the share of fast-growing enterprises in Croatia based on financial information provided for the needs of the project by FINA, partner in the project.

For the purpose of development of fast-growth potential prediction models, a combination of criteria of growth of sales and employees was used. However, due to the very small number of enterprises that meet the criterion of employee growth rate of 20% in the observed three-year period, the numerical value of this criterion was reduced to 10%.

Research methodology

Research of fast-growing enterprises was conducted using secondary and primary data.

Secondary data include data from financial statements of small and medium enterprises, which were by made available for project purposes by the Financial Agency (FINA), as a partner in the project. Based on analysis of this data, the share of fast-growing enterprises in Croatia was determined according to different growth criteria (employees, sales, total revenues and assets). Where possible, the obtained indicators were compared with some other countries.

Primary data was collected using a specially prepared questionnaire, using findings from the analysis of published research papers on factors that affect enterprise growth, as well as a survey tool used in GEM research. The survey was conceived in 3 parts that encompassed characteristics of entrepreneurs, enterprises and environment. A total of 265 entrepreneurs were surveyed online in 2015.

The survey questionnaire is available at www.potento.eu .[36]

The data collected through the survey were "connected" with financial reports of the surveyed enterprises for the 2012-2015 period, which, after data cleansing, resulted in a database of 191 enterprises.

For 156 enterprises it was possible to obtain all the necessary information to determine the fast-growing enterprise status (data on sales and employees in three consecutive years in the 2012-2015 period). Incorporating the project definition of fast-growing enterprises using the two most important growth criteria (enterprise is defined as a fast-growing if it had growth of employees of 10% for two years in a row or if it had sales growth of 20% for three consecutive years) allowed the identification of fast-growing enterprises within the database of 156 enterprises. Through this "filtering" it was determined that out of 156 enterprises, there 29% (46) fast-growing enterprises and 71% (110) others – without growth or with growth slower than the fast-growing category.

In the first step of development of fast-growth potential prediction models, each enterprise characteristic from the questionnaire was analysed individually in order to describe the profile of fast-growing enterprise or entrepreneur and to compare fast-growing with other enterprises. In the second step, growth potential prediction model was created, which shows which combination of characteristics of entrepreneurs, enterprises and environment is important for the realization of growth and which allows the calculation of probability of growth for each small and medium enterprise in Croatia. Factor analysis and logistic regression were used to create the model.

Research results

Given the use of secondary and primary data for analysing the share of fast-growing enterprises in the total number of small and medium enterprises in Croatia, as well as for determining the profile of fast-growing enterprises, presentation of research results follows the same approach.

How many fast-growing enterprises are there in Croatia?[37]

Four criteria and two growth rates were used to determine the growing enterprise status. The criteria are: total revenues, sales, assets and employees, and growth rates are 20% and 10%. A fast-growing enterprise is the one that achieves annual growth of 20% or more, and growing enterprise is the one with growth rate of 10% or more, but less than 20%, in the three-year period, from 2012 to 2015.[38]

Fast-growing enterprises (growth rate of 20% in three consecutive years) are an elitist minority everywhere in the world, but Croatia has an extremely small share of such enterprises (Table 53).

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[36] Interested parties can fill out the questionnaire and immediately get a report on the growth potential of their enterprise.

[37] Financial data for small and medium enterprises from the 2012-2015 period were used for this analysis, which were made available through partnership with Financial Agency (FINA).

[38] Due to the lack of particular data, or if the value entered for one of the criteria was 0, it was not possible to calculate growth and such enterprises were excluded from the analysis by this criterion. The only condition set was that the company exists for at least one year before the start of fast growth.

Table 53 Growing enterprises by different criteria in the period 2012-2015

	Sales		Total revenues		Assets		Employees	
	20%	10%	20%	10%	20%	10%	20%	10%
Non-growing enterprises – number	51375	49852	58786	57177	62692	61026	40492	40030
Growing enterprises – number	1302	2825	1545	3154	1573	3239	296	758
Share of growing enterprises – %	2.47	5.36	2.56	5.23	2.45	5.04	0.73	1.86

The most accessible international data on fast enterprise growth are those according to the criterion of number of employees in the enterprise. With only 0.73% of fast-growing enterprises according to the number of employees criterion, Croatia significantly lags behind Canada (5%) or the U.S. (4%). Even when this criterion is lowered to the level of growth rate of 10%, Croatia still lags behind: for example, Austria has 7%, Norway 12%, Czech Republic 10%, Finland 13% and Hungary 11% of such growing enterprises (OECD, 2016).

Variations in the structure of fast-growing and slower growing enterprises are present with respect to activities (Table 54), which are grouped into 10 groups.

Table 54 Share of fast-growing businesses by activity - %

Activity	Sales		Total revenues		Assets		Employees	
	20%	10%	20%	10%	20%	10%	20%	10%
Agriculture	2.12	4.38	2.83	4.99	1.58	4.00	0.54	1.70
Industry	2.32	5.30	2.36	4.95	2.21	4.70	0.68	2.40
Construction	2.75	5.14	2.65	4.79	2.02	4.27	0.87	2.08
Trade	2.27	5.14	2.32	5.03	1.91	4.38	0.59	1.51
Transportation and storage	3.00	7.06	2.82	6.79	3.12	6.57	1.40	3.14
Accommodation and food	2.50	5.99	2.55	6.23	4.31	7.71	0.82	2.17
Information and communication	3.41	6.78	3.31	6.30	4.17	7.28	1.52	2.98
Finance and real estate	1.88	3.65	3.02	4.28	1.55	2.89	0.78	0.98
Professional, scientific and technical activity	2.38	4.96	2.55	5.03	2.89	5.80	0.55	1.23
Education, services, arts	2.74	6.15	2.64	5.85	2.68	5.36	0.67	1.88

At a level of significance of 10%, testing has shown that there are significant differences in all criteria. The lowest number of fast-growing enterprises compared to slower growing enterprises is present in the 'finance and real estate' sector (according to criteria of sales and assets). An exception is the criterion of total revenues, where there is least such enterprises in the 'trade' sector, and according to the criterion of employment in the 'agriculture' sector. According to most criteria, 'information and communication' is the activity with the highest percentage of fast-growing enterprises.

The definition of regions (see Chapter 3)[39] that is used by the GEM study for analysis of distribution of entrepreneurial activity in Croatia was also used for analysis of regional distribution of fast-growing enterprises (Table 55).

[39] Zagreb and surroundings, Slavonia and Baranja, Northern Croatia, Lika and Banovina, Istria, Primorje and Gorski Kotar, Dalmatia

Table 55 Regional distribution of fast-growing enterprises – share, in %

Activity	Sales		Total revenues		Assets		Employees	
	20%	10%	20%	10%	20%	10%	20%	10%
Zagreb and surroundings	2.78	5.78	2.79	5.64	2.79	5.59	0.79	1.90
Slavonia and Baranja	2.26	5.00	2.03	4.59	2.46	4.98	0.84	1.98
Northern Croatia	1.87	5.35	2.15	5.21	2.44	5.13	0.70	2.16
Lika and Banovina	1.82	4.33	2.11	4.50	2.06	4.66	0.49	2.00
Istria, Primorje and Gorski Kotar	2.33	4.56	2.41	4.52	1.95	4.12	0.65	1.61
Dalmatia	2.55	5.65	2.77	5.49	2.35	4.92	0.68	1.72

Using the chi-square test on the data on growing enterprises by regions, significant differences at a level of significance of 5% are present in all criteria except employment. This means that, according to the criterion of employment, there are equally few growing enterprises in all regions. According to the criterion of sales, Lika and Banovina has the lowest representation of fast-growing enterprises compared to slower growing enterprises. The Zagreb and surroundings region has the highest percentage of fast-growing enterprises according to all criteria, with a statistically significant difference compared to other regions.

Gazelles are a special group of fast-growing enterprises with the requirement that they existed two years and less before fast growth (Lilischkis, 2011) (Table 56)..

Table 56 Share of gazelles by growth criteria

Definition of growth	Number of enterprises for which it is possible to calculate whether they are gazelles	Number of gazelles without the requirement that they have 10 employees at the beginning	Number of gazelles with the requirement that they have 10 employees at the beginning
Sales	6855	603 (8.8%)	20 (0.29%)
Total revenues	8437	795 (9.42%)	19 (0.23%)
Assets	9520	920 (9.66%)	34 (0.36%)
Employees	4836	117 (2.42%)	8 (0.17%)

The criterion of employment (without the requirement of 10 employees at the beginning of operations or with the requirement of 10 employees) radically changes the indicator of the share of gazelles, almost to the level of non-existence. There are the most such enterprises according to the criterion of assets, and the least according to the criterion of employees.

Profile of fast-growing entrepreneur / enterprise

Data collected using a specially prepared questionnaire that covers characteristics of entrepreneurs, enterprises and environment enabled identification of factors that influence the development of potential for fast growth of enterprises. These "soft" indicators are important for enriching "hard" financial data on growing enterprises, and their combination contributes to increased reliability when making any prediction model. Profile of fast-growing entrepreneur / enterprise is based on 156 questionnaires completed by enterprises for which it was possible to collect all the necessary information to determine the fast-growing enterprise status (data on sales and employees in three consecutive years in the 2012-2015 period).

To test the statistical significance of differences, depending on the type of variables, the following tests were used: χ^2 test, Fisher's exact test (in case of small groups in analysis), t-test (as parametric) and Mann-Whitney test (as non-parametric) in the case of two continuous random variables, and ANOVA (as parametric) and Kruskal-Wallis ANOVA (as non-parametric) in the case of 3 or more continuous random variables. The selected test significance level is 5%.

Owner profile

Owners of fast-growing enterprises are on average 42 years old, have 18.5 years of work experience and have been entrepreneurially active for 11.5 years. They evaluate their competencies in the fields of IT, organizational and communication skills, creativity and capacity for strategic thinking as very good[40] while networking and foreign language skills as somewhat weaker. On average, a fast-growing enterprise was founded by two people, and strategic decisions are also made by two people. Respondents use 25% of their time for strategic planning in a fast-growing enterprise.

Owners of non-growing enterprises are on average older than owners of fast-growing enterprises and have 46 years. They have weaker IT skills and weaker knowledge of foreign languages. Also, they have more years of work experience, as well as more years of work in entrepreneurship. According to these characteristics, there is a statistically significant difference between owners of fast-growing and non-growing enterprises, while there are no statistically significant differences according to other characteristics (e.g. number of founders, number of people who make strategic decisions, time devoted to strategic planning, communication skills, creativity, strategic thinking, learning).

Ownership structure in fast-growing and non-growing enterprises with regard to gender is the same: 25% are owned by women, 75% are owned by men and there is no statistically significant link between gender and enterprise growth.

Fast-growing enterprises are in greater percentage owned by persons with the highest level of education (master's degree and doctorate) in relation to non-growing enterprises (of all non-growing enterprises, 66% of owners have a master's degree and 1% have a doctoral degree, while in fast-growing enterprises this is 80% and 2%). The relationship between education and enterprise growth is statistically significant.

Owners of both growing and non-growing enterprises equally acquire additional education, about 50% at least once a year. There is no statistically significant link between growth and additional education – it has not been shown that owners of fast-growing enterprises get more education.

Regarding the propensity to take risks, owners of both categories of enterprises are cautious and are not prone to taking unreasonable risks. There is no statistically significant difference in the propensity to take risks among owners of fast-growing and non-growing enterprises.

Among the owners of fast-growing enterprises, there are more of those who have had previous entrepreneurial experience before launching their current business. There is a statistically significant link between previous experience and growth – of all the fast-growing enterprises, 68% had previous entrepreneurial experience, and of all the non-growing enterprises, 56% had previous entrepreneurial experience.

Interestingly, among the owners of fast-growing enterprises, there is a lower percentage (50%) of those who come from families where someone was entrepreneurially active, while there are more of those (61%) among the owners of non-growing enterprises. This difference is statistically significant.

Owners of fast-growing enterprises have stronger internal and external locus of control – they think that results depend on the effort they invest ("my own results depend on how much effort I invest"), and they also feel that they can affect things around them ("I have the feeling that I can affect the things that happen to me"). This is statistically significantly different compared to owners of non-growing enterprises. At the same time, both categories of owners have the same propensity to take risks ("I am willing to take risks"), need for achievement ("even after I have achieved success, I strive to do the best I can"), orientation towards goals at personal level ("I am goal-oriented") and there are no statistically significant differences in grades of these characteristics between owners of fast-growing and non-growing enterprises.

Enterprise profile

General profile: The average age of fast-growing enterprises is 13 years, while the average age of non-growing enterprises is 16 years.

As many as 65% of fast-growing enterprises belong to the group of enterprises with high technology (this percentage is 50 in non-growing enterprises), 28% come from creative industries (8% in non-growing). The

[40] Likert scale of 1 to 5 was used in the questionnaire, where grade 1 means the worst, and 5 the best.

most fast-growing enterprises operate in the information and communication sector. Differences in the share of fast-growing enterprises by these activities are statistically significant.

On average, 56% of employees in fast-growing enterprises and 37% of employees in non-growing enterprises have highly specialized knowledge, which is a statistically significant difference.

Employees on average have some 200 hours of training annually in fast-growing enterprises, and 100 hours in non-growing enterprises, which is statistically significantly different.

Financial profile: There are differences in export activities between fast-growing and non-growing enterprises: fast-growing enterprises have 28.8% of customers from abroad, while non-growing enterprises have 18.8%. Also, fast-growing enterprises on average achieve 15.8% of their revenue from exports, while this share for non-growing enterprises amounts to 8.6%. These differences are statistically significant.

Although fast-growing enterprises are heavily indebted (it is obvious that they finance their growth by borrowing), they are still significantly less indebted than non-growing enterprises – the ratio of liabilities and assets of fast-growing enterprises is 0.8, compared to 2.8 of non-growing enterprises. Also, the share of bank loans in liabilities is 7%, while in non-growing enterprises it amounts to 12%, which is a statistically significant difference.

Only 24% of fast-growing and as many as 76% of non-growing enterprises used loans as a source of funding in the last 3 years, which is statistically significantly different.

Venture capital funds were used by 4% of fast-growing and 0% of non-growing enterprises, which is a statistically significant difference.

Only 2% of fast-growing and as many non-growing enterprises have used business angels.

Around 20% of fast-growing and nearly the same percentage of non-growing enterprises have used state aids as a source of funding.

The share of intangible assets in total assets is at the level of 1.5% in both fast-growing and non-growing enterprises.

The share of investments in new fixed assets in total assets is at the level of 5% in both fast-growing and non-growing enterprises.

Liquidity of both fast-growing and non-growing enterprises is about equal (acid-test ratio is 1.5).

Profitability is equal – profit margin is about 8%, and return on assets is 15%.

Strategic profile: About 30% of fast-growing and the same number of non-growing enterprises have a written business strategy.

Only 26.7% of fast-growing and 17% of non-growing enterprises have a written marketing strategy, which is a statistically significant difference.

As many as 96% of fast-growing enterprises have a clearly expressed orientation towards growth in their vision, compared to 85% of non-growing enterprises, which is statistically significantly different.

50% of fast-growing and 60% of non-growing enterprises will need additional funding sources in the next two years.

In the last 3 years, funding difficulties were experienced by 31.1% of fast-growing and 45.5% of non-growing enterprises, which is a statistically significant difference.

Only 25% of fast-growing and as many non-growing enterprises have products / services that are protected by some form of intellectual property.

More fast-growing enterprises (50%) use ideas they copy from competitors, while 37% of non-growing enterprises do the same, which is a statistically significant difference.

In both categories of enterprises there is no difference in relying on advice of other entrepreneurs: 70% of enterprises mostly take advice from other entrepreneurs and people who have great business experience.

Approximately 60% of both categories of enterprises consult with their associates, while 55% consult with suppliers. About 40% of both growing and non-growing enterprises ask their family for advice / ideas, and as many ask their clients. 30% of both ask professionals for advice / ideas, and the least, i.e., 20% use advice and ideas of banks and lawyers.

The results of research on organizational learning (which is identified through readiness and orientation towards strong growth, shared vision of growth of all employees, strong team spirit, learning from own mistakes, and studying successful and unsuccessful business activities) show that there is no difference in grades between fast-growing and non-growing enterprises.

The questionnaire also covered questions related to monitoring market needs (market dynamics). Using grades from 1 (I completely disagree) to 5 (I completely agree), business owners expressed their attitude towards the offered statements relating to: tracking customer satisfaction, monitoring competition, sharing information about customer wishes, creating internal company procedures focused on meeting market needs, and focusing on attracting new customers. The results show that there is no statistically significant difference in grades between growing and non-growing enterprises.

Business owners evaluated market dynamics through following statements: customers are constantly looking for new products / services; products and services in the market are quickly becoming obsolete; companies often have to invest in new technology because it is rapidly becoming obsolete; technology on which business is based is often changing; market is rapidly growing; market is characterised by strong competition. The results show that there is no statistically significant difference in grades between growing and non-growing enterprises.

Organizational profile: Regarding the degree of centralisation / decentralisation, standardisation of procedures, formalisation, specialisation – there is no statistically significant difference in answers between fast-growing and non-growing enterprises.

In 80% of enterprises of both categories each employee has their own specific tasks.

In 45% of enterprises of both categories employees have duties that only they can fulfil.

Innovation profile (based on questions from the GEM questionnaire): OOf all the fast-growing, as well as non-growing enterprises, about 12% offer products and services that are new to all of their customers. There is a statistically significant difference between fast-growing and non-growing enterprises in the percentage of those that offer products that are not new to a single customer and those whose products are new to some customers – 16% of fast-growing and 26% of non-growing enterprises have products that are not new to a single customer, while the percentage of those whose products are new to some customers amounts to about 70% of fast-growing, and 60% of non-growing enterprises.

The situation is similar with the question how many businesses currently offer the same product / service as their enterprise offers. The percentage of those where no other enterprise offers such a product is about 4% for both fast-growing and non-growing enterprises.

There is a statistically significant difference between fast-growing enterprises that do not have a high level of competition (only a small number of businesses offer the same product / service) – 56%, while there are less such non-growing enterprises (44%), while 40% of fast-growing and 53% of non-growing enterprises belong to the group of the weakest that are faced with strong competition.

A significant difference between fast-growing and non-growing enterprises exists in the use of technology that is used in the enterprise. Fast-growing enterprises have significantly newer and more advanced technology than non-growing enterprises: 13% of fast-growing and 3% of non-growing enterprises use the latest technology – younger than 1 year. Somewhat older technology, aged between 1 and 5 years, is used by 67% of fast-growing and 60% of non-growing enterprises, and old technology is used by 20% of fast-growing and 37% of non-growing enterprises.

As for the new products / services / processes in the enterprise, there is no difference between fast-growing and non-growing enterprises. About 11% of both categories of enterprises stated that they do not have nor plan to have innovations in those areas, while about 30% of both intend to launch innovations. Also, 30% of both fast-growing and non-growing enterprises are currently in early stages of innovation implementation, and about 20% are experienced innovators.

Profile of barriers to enterprise growth

Respondents (business owners) used grades from 1 (not a barrier at all) to 5 (very high barrier) to evaluate to what extent the selected factors represent barriers to enterprise growth. Barriers are divided into internal and external.

Internal barriers include human resources (retention of qualified employees; availability of knowledge / technology; networking; managerial skills), technological barriers (monitoring technological progress; obtaining the latest technology; difficulties in implementing new technology), market barriers (access to new markets; problems with supplies and suppliers; maintaining competitiveness; access to foreign markets) and financial (maintaining cash flow).

External barriers include administration / regulation (administrative barriers; lack of state support; economic policies; labour law; tax policy, corruption), market barriers (increased competition; business environment) and financial barriers (lack of bank support; price of capital; availability of capital).

Analysing all the barriers together, owners of fast-growing enterprises classified all external barriers as the 3 largest barriers: tax policy, economic policy and business environment. Owners of non-growing enterprises agree regarding the first two barriers, and place corruption as a barrier to growth in the third place.

Both categories of respondents have very similar attitudes towards the smallest barriers, which are, unlike the largest barriers, all internal barriers: networking, implementation and monitoring of technology and available knowledge. Such an attitude raises the question of insufficient self-criticism, because if monitoring of technology is not a problem, how is a low level of innovative products possible? Owners of fast-growing and non-growing enterprises believe that the availability and price of bank loans are not barriers. Maintaining cash flow and access to new markets are the largest internal barriers for both fast-growing and non-growing enterprises.

The differences between the owners of fast-growing and non-growing enterprises are in the grades of following barriers: maintaining cash flow, increased competition, government's economic policies, labour law and corruption – all of these barriers were graded significantly lower by fast-growing than non-growing enterprises.

Growth potential prediction models

Based on insight into current debate on fast-growing enterprises and their importance for national economies due to their contribution in creating employment, competitiveness in global markets, thereby increasing the quality of life, and the fact that the share of such enterprises in the Croatian economy is exceptionally low, growth potential prediction model was developed within the project. Although growth potential prediction models exist, the research team's assumption was that the quality of these models can be improved if they are constructed on the basis of contextualisation (recognizing the specificities of enterprise in a specific entrepreneurial environment, in Croatia).

Model description

The growth potential prediction model was created to investigate the combination of characteristics of entrepreneurs, enterprises and environment, which is important for the realization of growth and to allow calculation of probability of growth for each small and medium enterprise in Croatia. The definition of growth included the combination of two criteria: growth of sales and growth of employees over a three-year period. Factor analysis and logistic regression were used to create the model.

Growth potential prediction model for small and medium enterprises in Croatia included the following 4 variables that contribute to the understanding of growth potential and make it possible to calculate probability of growth:

1. Age of technology used in the development of products / services:
   - less than 1 year
   - from 1 to 5 years
   - more than 5 years
2. How many enterprises offer the same product / service (as the surveyed enterprise):
   - many
   - few
   - none
3. Did the enterprise go through difficulties in financing its business in the last 3 years:
   - yes
   - no
4. Barriers to growth on the capital side:
   Factor (created using factor analysis) that consists of the following variables: lack of bank support, price of capital and availability of capital.

Table 57 Potential prediction model for growth of sales and employees for small and medium enterprises in Croatia

Variable		regression coefficient	p-value
Age of technology	from 1 to 5 years	-1.768	0.0825
	more than 5 years	-2.184	0.0413
Enterprises that offer the same product / service	many offer the same	-1.222	0.386
	few offer the same	-0.562	0.266
Without difficulties in financing in the last 3 years		0.535	0.273
Barriers to growth on the capital side		-1.018	<0.001
Model accuracy: Hit rate for growing = 78%; Hit rate for non-growing = 60%; AUC=0.76; KS=50.5			

It can be concluded from the model that if a company has older technology, especially if it is technology that is 5 or more years old, its chances to become fast-growing are decreasing compared to companies that have newer technology. The newer the technology a company uses, the greater the probability of achieving growth.

The chances of a company that is offering the same products as other companies, especially if there are many such companies, to become fast-growing are decreasing compared to companies that have products no one else offers. Furthermore, it is more likely that a company will achieve higher growth if it did not have funding difficulties in the previous 3 years. The lower the barriers on the capital side, i.e., the lower the price and availability of capital, and if it is possible to obtain bank support, the greater the probability of growth.

If growth potential is calculated for all enterprises in the sample by activity, it can be seen that enterprises belonging to the 'information and communication' activity have the highest potential for growth, followed by 'transportation and storage' and 'professional and scientific activity'. Enterprises belonging to activities 'real estate', 'agriculture, hunting, forestry and fishing' and 'construction' have the lowest potential for growth.

Regarding the analysis of potential by region, regions Zagreb and surroundings and Istria, Primorje and Gorski Kotar have the greatest potential, while Northern Croatia and Lika and Banovina are the regions in which companies have the lowest growth potential.

How to use the growth potential prediction tool?

Tools were developed within the project, the so-called *'growth prediction models'*, which can be used by all companies in Croatia to assess their growth potential and to get recommendations on how to increase growth potential of the enterprise.

Two types of statistical growth potential prediction models were developed and tested, the first based solely on financial reports and the second based on a combination of financial reports and responses of enterprise owners to selected questions.

Data, i.e. responses are entered into formulas for growth potential assessment. The result is a number (probability) showing the likelihood that the enterprise will achieve fast growth of sales, total revenues, assets and number of employees over the next three-year period. In addition to providing companies with information on the potential for achieving growth, recommendations for increasing growth potential were also created within the project.

A report is generated based on the calculated growth potential and recommendations, which can be obtained by each enterprise through a web service that has been developed within the project, after completing the survey questionnaire (http://www.potento.eu/Ankete/Create). Filling out the questionnaire is compulsory, because growth potential and recommendations for increasing growth are calculated on the basis of entrepreneurs' answers to questions.

After the owner / enterprise enters the requested information, they will receive a report on growth potential, which consists of 5 information related to growth potential:

1. Enterprise information. Key financial indicators for assessment of the potential for growth are shown, which can be based on total revenues, sales, assets or employees.

2. Potential for enterprise growth in relation to all enterprises in the range from very low to very high. In order to calculate growth potential, enterprise's financial indicators and owner's answers from the questionnaire are weighted with specific weighting factors so as to obtain the probability that in the next three-year period the enterprise will achieve 20% growth of revenue from sales, total revenues, assets or number of employees. Based on the calculated probability, growth potential is determined, ranging from very high to very low, i.e., without growth potential.

3. Potential for enterprise growth in relation to all enterprises expressed in percentages. In order for an enterprise to get information where it stands in relation to other enterprises, growth potential is divided into deciles so that the enterprise gets information on how many enterprises have higher, and how many have lower growth potential. For example, an enterprise can be among 10% of enterprises with the highest growth potential, or 85% of enterprises can have higher potential for fast growth than the enterprise in question, which means that it has potential for fast growth which is higher than that of 15% of enterprises.

4. Potential for growth in relation to the average in the branch of activity. Enterprises are compared with regard to growth potential and in relation to activity to which they belong, and thus the report also contains information whether the enterprise is better or worse than the average of the branch of activity to which it belongs.

5. Recommendations. Based on the calculated growth potential, enterprises get recommendations on how to realize or increase their potential for fast growth.

From research to application

If an enterprise recognizes that there is potential for growth at a very early stage, there is a greater chance that growth will be achieved. If an enterprise has a very low growth potential, and has ambitions for growth, it can take certain actions that will contribute to the development of the potential. Growth does not happen by chance, it is largely determined by the characteristics of the enterprise and the owner, and strategic and organizational readiness for growth.

The results of the conducted study are complementary with the presented results of the GEM study from 2017, as well as from earlier periods. Both studies have identified the same patterns, as for example:

- people who are more educated are more often enterprising,
- low level of innovation, particularly in the field of products,
- regional distribution of fast-growing enterprises confirms regional distribution of entrepreneurial activity, especially given the motivational index (Lika and Banovina has the least number of entrepreneurs because of perceived opportunity, but also the least fast-growing enterprises). The largest number of fast-growing enterprises is located in regions Zagreb and surroundings and Istria, Primorje and Gorski Kotar, and in those regions there are also the most entrepreneurs because of perceived opportunity.

Therefore, research conducted within the 'Development and application of growth potential prediction models for small and medium enterprises' project and the results of the GEM 2017 study presented in Chapters 2, 3 and 4 provide joint recommendations presented in Chapter 6.

In addition, the following specific recommendations arising from this project relate to enterprises, educational institutions, financial institutions and relevant ministries (primarily economy, finance, science and regional development):

- for enterprises: recommend the use of models for self-assessment of capacity for fast growth, with the objective of strengthening strategic and organizational readiness for fast growth,
- for educational institutions: recommend interventions in educational content in which issues of fast enterprise growth, the riskiest stage of enterprise life cycle, are not sufficiently present,
- for financial institutions: recommend the use of models for assessment of capacity for fast growth to their clients, thus helping clients understand their capacity for fast growth, as well as to improve their approach to the assessment of clients' performance in the future,
- for relevant ministries and public services (e.g. FINA[41], BICRO, Croatian Bank for Reconstruction and Development…): design government interventions aimed at creating stimulating business environment for fast-growing enterprises, develop programs to support collaboration between research institutions and the business sector.

[41] Thanks to the partnership with the Financial Agency (FINA) in the implementation of this project and an earlier project Enterprise risk assessment models (within the Research program Entrepreneurship – mobilizer of social integration), in addition to the growth potential prediction model for small and medium enterprises, risk assessment models, models for the assessment of early warning signs and capital structure models were also created. By commercialising these research products, FINA can significantly enrich its portfolio of information products and thereby contribute to the quality of business decision-making at enterprise level, as well as to designing policies in the field of economy and entrepreneurship, finance and regional policy.

6 Conclusions and recommendations

GEM is the only study in the world that monitors entrepreneurial activity at individual level in specific national context of entrepreneurship ecosystem. Data collected from a representative sample of adult population (resulting from personal experience in entrepreneurial activity) and experts on the quality of the entrepreneurship system reflect self-evaluation, expectations and perception of certain aspects of the entrepreneurial process (from individual attributes and social values to individual stages of the life cycle of entrepreneurial activities: launch, growth, exit) and interaction with the entrepreneurship ecosystem. Because of this specificity, the results of the GEM study are used by governments and international institutions (such as, for example, the OECD) in order to better understand the entrepreneurial capacity of the country and to design polices relevant to strengthening entrepreneurial capacity at the level of the individual and the entrepreneurship ecosystem.

Croatia's participation in the GEM study since 2002 allows observing trends and patterns and monitoring entrepreneurial activity in Croatia (and the groups of countries Croatia is compared with: the EU and countries whose economies are efficiency-driven and are transitioning towards innovation-driven economies). Longitudinal and international comparisons are made possible by using standardized indicators calculated from data collected using the same research tools in accordance with theoretically grounded conceptual framework.

Conclusions – there are no changes, and they have been necessary for years

The presented results of the GEM study in 2017 (Chapters 2, 3 and 4) and conducted additional analysis of growing enterprises (Chapter 5) confirm the observed tendencies and patterns of entrepreneurial behaviour in Croatia, and emphasize critical areas requiring interventions from individual to institutional level.

What does GEM say?

Based on the conducted analysis, the recommendations follow the GEM conceptual framework, which assumes two fundamental interactions: interaction between individual attributes and social values, and interaction between the individual and the entrepreneurial environment. Both interactions are crucial to shaping entrepreneurial activities.

Perceived opportunities in the immediate surroundings of the participants in the study has significantly increased (from 22.3% in 2015 to 33.6% in 2017), which enabled Croatia to "become unglued" from the rear of the EU for the first time and is a sign of return of business optimism. Nevertheless, the difference between Croatia and the EU is still very large (33.6% vs. 42.6%), which also speaks of a great difference in the potential that determines entrepreneurial capacity of a country. At the same time, Croatia is at the top of EU by expressed entrepreneurial intentions (it was in the first place in 2017), suggesting a higher share of starting business ventures out of necessity than because of a perceived opportunity.

Social values do not support entrepreneurial activity. In European perspective, Croatia is in the first third according to the attitude that being an entrepreneur is a good career choice, but is the last among the EU countries involved in the GEM study according to the attitude about the social status of successful entrepreneurs. Nearly two-thirds of respondents (at the level of about 62% in the 2012-2017 period) have a positive attitude about entrepreneurial career (this is confirmed by the fact that one-fifth of respondents express intention to launch a business venture – above the EU average), but this is not followed by attitudes about social status, nor by media attention to entrepreneurship, which reduces the capacity for entrepreneurial activity.

Dynamism of entrepreneurial activity of Croatia measured through early activity – TEA index (up to 42 months of activity) and activity of "established" entrepreneurs (more than 42 months of activity) still shows two worrying situations: low motivational index and low share of "established" businesses. Croatia in 2017 maintains the previously achieved intensity of "start-up" entrepreneurial activity (8.9%), and according to this indicator, it is even above the average of EU countries involved in the GEM study, but this is the result of strengthening entrepreneurial activity out of necessity, and not because of perceived opportunities. The motivational index (ratio of TEA because of perceived opportunity and TEA out of necessity) returned to 1.8 in 2017 (after a slight recovery to 2.2 in 2016). According to the motivational index, Croatia is at the rear of the EU throughout the observed period, and in 2015 it was in the last place. The significance of the motivational index for assessing the capacity for entrepreneurial activity can be seen from the comparison with the motivational index average for the EU (e.g. in 2017) of 5.0, which means that in the EU, on average, there are 5 times more of those who enter entrepreneurial activity because of perceived opportunity, while in Croatia there are only 1.8 times more such entrepreneurs.

At the same time, in the 2015-2017 period Croatia increases the density of "established" businesses (number of "established" businesses per 100 adult residents) from 2.8 in 2015 to 4.4 in 2017, but this is still only 62% of the EU average in 2017 (compared to 43% of the EU average in 2015, when Croatia was in the last place because of the lowest density of "established" businesses). Such a low level of presence of "established" businesses is a long-term characteristic of the Croatian economy, which still warns of a low basis for generation of new value.

In 2015 and 2017, according to the percentage of business ventures (enterprises) that have ceased to operate in the last 12 months, Croatia is slightly below the EU average (in 2016 it was significantly above the EU average). Interpretation of this indicator requires contextualization, because a high percentage of exits can mean unpreparedness for entry into entrepreneurial activity, as well as efficiency of the regulatory framework that enables fast "airing" of economic structure. A low percentage of exits can mean good preparation, as well as possible limiting influence of the entrepreneurship ecosystem. High proportion of entering into entrepreneurial activity out of necessity in the observed period warns of possible insufficient preparedness, and low level of exits warns of administrative obstacles faced by entrepreneurs who want to get out of a business venture. The dynamism of renewal of entrepreneurial structure is low, observed through the relationship between early-stage and "established" businesses, compared to the highest (which in all three observed years relates to a highly developed country – Luxembourg). The best relationship between new and "established" businesses is the one that enables sustainable vitality of entrepreneurial structure, but it is necessary to have insight into quality of business ventures to make such an assessment. From the GEM study, the quality of new business ventures can be assumed through the motivational index, and the quality of "established" business ventures through their growth potential.

Croatia continues to have **a small number of growing businesses**, which the GEM study defines using the five criteria of innovation: use of new technologies, innovation in the development of new products, exposure to competition, export orientation and expectation of new employment. The already observed occurrences continue in 2017: Croatia has significantly more businesses (both early-stage and "established") that invest in the latest technologies, but there are less businesses with new products, because of which they are exposed to greater competition in the market. In 2017, Croatia has 22% of new businesses and 24.1% of "established" businesses with the latest technology against 15.6% of new and 7.5% of "established" businesses in the EU. But, in the 2015-2017 period, around 70% of new and more than 75% of "established" businesses in Croatia have products that are new to no one. New businesses show an increase of new products, but in the "established" businesses group, the share of those who have a product that is new for everyone is declining.

In the category of early-stage business ventures there is a trend of growth of those who have technologies older than 5 years and a significant drop of those who have the latest technologies. The share of new and "established" businesses in the category of those who use the latest technology is equal. It is important to note that Croatia is the country with the highest share of "established" businesses with the latest technology in the European Union in all three observed years. The longevity of this pattern of entrepreneurial activity (technological readiness without new products) indicates the reason why Croatia fails to move on the competitiveness scale. Competitiveness is not achieved through technological equipment, but through innovative products[42].

Lack of new products prevents Croatia from exiting the markets with intense competition, and most businesses are still swimming in the "red ocean" of the domestic market. New ventures are more often export-oriented (51%, exports more than 26% of total revenue) than "established" businesses (40%), but the presence of ventures that do not export anything is increasing in both categories of businesses.

The intensity of new employment is one of the important dimensions of growing businesses, which is used as a key criterion by many international institutions (e.g. OECD). Above-average optimism among both new and "established" businesses on new employment (more for employment of 5+ in the next 5 years than for employment of 10+ employees) compared with the average of EU countries that participated in the GEM study, is not confirmed by other indicators of entrepreneurial activity (low motivational index, low competitiveness due to low level of innovativeness of products). This raises questions for numerous participants in creation of the entrepreneurship ecosystem (government policies and programs, education, cooperation between research institutions and the business sector, media...), but also for entrepreneurs on how they see the future of their ventures and what strategies, business policies and business models they implement.

According to **entrepreneurial employee activity** (activity on the development of a new product / service, or launching a new business unit for the employer), Croatia is above the EU average throughout the observed 2015-2017 period. In 2017, 9.2% of employees in Croatia performed entrepreneurial activity within their company, while the average for EU countries that participated in the GEM study is 7%. This form of entrepreneurial activity represents Croatia's hidden entrepreneurial capacity, which no one takes into account, neither businesses, nor national policies in the field of innovation, education or tax relief.

Distribution of entrepreneurial activity is monitored through entrepreneurial demographics, sectoral and regional distribution. ***Entrepreneurial demographics show relatively stable relations*** in distribution of entrepreneurial activity both by gender and age. Croatia is still significantly a "male" country by entrepreneurial activity, at the level of average of EU countries that participated in the GEM study in 2017, but the relationship of entrepreneurial activity according to the gender criterion is significantly less balanced than in the Netherlands (1.8 in Croatia vs. 1.1 in the Netherlands). Women more often start business ventures out of necessity, while men do it more often because of perceived opportunities. Entrepreneurial activity by age structure slightly oscillates around the EU average, except in the category of young people aged 18-24 years (where more young people are entrepreneurially active in Croatia than in the EU) and in the 55-64 years of age category (there are less entrepreneurially active people in Croatia than in the EU).

The pattern that ***more educated people are more entrepreneurially active*** is still being confirmed, by which Croatia is similar to the EU average.

Sectoral distribution of new business ventures in Croatia (measured by the TEA index) in the 2015-2017 period shows growth in the extractive industry and a decline of business ventures in the sector of services oriented to businesses and consumers. Comparing Croatia with the average of entrepreneurial activities in these sectors in the EU, Croatia has less new business ventures in the sector of services oriented to consumers and significantly more in the extractive industry sector.

Entrepreneurial activity (measured by the TEA index) varies within the observed period with regard to ***regional distribution,*** with different motives. Although motivational index is low in all the "regions" (except in regions Istria, Primorje and Gorski Kotar and Zagreb and surroundings), the worst ratio between entrepreneurial ven-

[42] This is also confirmed by the Global Competitiveness Report (Schwab, ed., 2017): innovation capacity, rank 120 vs. availability of new technologies, rank 65. Since 2014, European Semester reports warn of insufficient investment in research and development, and in the 2017 report (March 7, 2018) various aspects of inefficiency of the Croatian innovation system are identified in detail (low investment, fragmentation of research activities, the academic sector does not stimulate cooperation between researchers and the business sector, responsibility for policies in the field of innovation distributed in three ministries).

tures started because of perceived opportunity and out of necessity is in Lika and Banovina throughout the entire observed period. Unidirectional quality of indicators of entrepreneurial capacity of a "region" and indicators that measure the level of development (GDP pc, development index, unemployment) is evident throughout the 2015-2017 period. For example, in 2017, out of six "regions", Zagreb and surroundings is in the first place by entrepreneurial activity (measured by the TEA index), in the second place by motivational index, in the first place by GDP pc and development index, with a below-average unemployment rate. Slavonia and Baranja has the lowest entrepreneurial activity, shares the lowest motivational index with Lika and Banovina, but also the lowest development index, GDP pc and highest unemployment. Reducing regional development differences requires equalization of entrepreneurial activity by region, as well as strengthening the motivational index (i.e., increasing the number of entrepreneurial ventures that are started because of a perceived opportunity, and not out of necessity). This is a process that will, with the passage of time, be reflected in changes in values of gross domestic product per capita and decrease in unemployment.

Entrepreneurial environment in Croatia is still more limiting than stimulating for entrepreneurial activity. According to experts' ratings, only two components (availability and quality of physical infrastructure – telecommunications[43] and transport, and domestic market dynamics) have a **stimulating effect** on entrepreneurial activity. Particularly **restrictive components** of entrepreneurial environment in Croatia are government policies towards the regulatory framework, presence of significant barriers to market entry, low level of transfer of research to the business sector, cultural and social norms (value system), and insufficient contribution of primary and secondary education to building entrepreneurial competencies of young people[44].

What do other studies say?

The observed tendencies and patterns in entrepreneurial activity in Croatia indicate an unsatisfactory state of affairs according to almost all indicators. In addition, the results of the GEM study have for years been complementary with studies on competitiveness (World Economic Forum) and ease of doing business (Doing Business, World Bank). All three studies identify the weakest components of the business environment in which entrepreneurs operate: complicated and non-transparent regulatory framework, underdevelopment of the financial market, mismatch between education and the needs of the economy, inadequate cooperation between research institutions and the business sector.

World Economic Forum's report for 2017-2018 (Schwab, ed., 2017: p. 13, 98-99) confirms the perennial limitations faced by the business sector. Croatia has been maintaining a middle position in the global competitiveness rankings since 2014 (74th place in 2017-2018, out of 137 countries). Of the 12 pillars of competitiveness, the labor market efficiency pillar has the lowest rating[45] (score 3.8, rank 107, down from 100th place in 2016), followed by innovation (score 2.9, rank 106, down from 103rd place in 2016), institutions (score 3.5, rank 102, down from 89th place), financial market development (score 3.6, rank 95 in both years)[46].

The business environment in Croatia is best rated for technological readiness (43rd place, with score 5.0) and for infrastructure (48th place, score 4.6). The research also confirmed that the most problematic factors for doing business in 2017 as well are inefficient government bureaucracy, tax rates, policy instability, tax regulations and corruption.

In its study on ease of doing business in 2018[47] the World Bank puts Croatia in 51st place out of 190 countries, with the worst rated components being obtaining construction permits, rank 126, tax burden, rank 95, and complexity of starting a business venture (procedures, costs), rank 87. In 2010, Croatia was "away" from the

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[43] According to the European Semester report (March 7, 2018), Croatia is significantly below the EU average in broadband network coverage (the same finding was also published the previous year). Particularly visible is the difference between urban and rural areas: according to coverage of rural areas with the new generation of fast fixed broadband technologies (67%), Croatia is among EU countries with the lowest level of coverage (EU average is 80%).

[44] These factors of entrepreneurial environment for years have been identified as the most critical by studies conducted by the World Economic Forum (on competitiveness), the World Bank (on ease of doing business) and the European Semester report.

[45] Likert scale of 1 (worst) to 7 (best) is used in the research of competitiveness.

[46] Even in more detail: the following subcomponents have the lowest ratings in 2017 (out of 137 countries): burden of government regulation; efficiency of legal framework in settling disputes; efficiency of legal framework in challenging regulations, capacity to attract talent; cooperation in labor-employer relations have rank 135. The following components have also been at the rear for years: government public procurement of advanced technology products, rank 134; effect of taxation on incentives to invest, rank 125; capacity for innovation, rank 120; venture capital availability, rank 117.

[47] Doing Business 2018: Reforming to Create Jobs (2018), The World Bank, p. 4.

best at the level of 61%, while in 2018 it is at 71.7% from the best (the biggest jump was between 2014 2015 – from 64% to 72% of the distance from the best), but since then the distance from the best oscillates slightly at that level.

Recommendations – how to stimulate more proactivity, innovation and responsibility in solving the problem of lagging behind

The GEM study in 2017 confirmed the so far identified trends and patterns of entrepreneurial activity in Croatia. Using three analytical perspectives (changes within Croatia, Croatia vs. European Union and Croatia vs. countries whose economies are efficiency-driven and in transition towards innovation-driven) provides a thorough understanding of the reasons why Croatia's entrepreneurial capacity fails to develop in line with the potential identified at the individual level (intentions, attitude towards entrepreneurial career). Entrepreneurial activity occurs in time and space, which means as an interaction between individual initiative and the entrepreneurship ecosystem within which the individual acts. In addition to the individual, the quality of the entrepreneurship ecosystem is crucial for building entrepreneurial capacity. It is expected that the entrepreneurship ecosystem should not restrict entrepreneurial initiatives at the individual level but stimulate and support them.

Conducted analysis of the results of the GEM study also in 2017, as well as in continuity since 2002 (when Croatia participated in the GEM study for the first time) warned of the restrictive effect of the entrepreneurship ecosystem, primarily in the areas of:

- Regulatory framework
- Education for entrepreneurial competencies
- Cooperation between research institutions and the business sector
- Quality of professional services needed by entrepreneurs (advice, mentoring)
- Access to financial resources (bank loans, alternative sources of funding)

From the presented results of the GEM study in 2017, compared with 2016 and 2015, in the EU perspective and the perspective of countries to whose development level Croatia belongs EU (efficiency-driven economies and economies in transition towards innovation-driven), and especially from the perspective of the European Semester report (from March 7, 2018), it is evident that most recommendations from previous years are still relevant today[48]. This still points to failure to act, as well as to responsibility for that, of everyone, from individuals to institutions.

Participation in the GEM study since 2002 allows Croatia to base its policies, programs and interventions on scientific findings. Findings accumulated in 16 years of research have created a capacity for understanding tendencies and patterns of entrepreneurial activity in Croatia, as well as the ability to compare with others. It is more than obvious that Croatia has the requirements needed for conducting policies based on facts and not on assumptions, and that all it takes to do so is determination. Otherwise, it will not be possible to make progress without which Croatia will remain at the rear of the EU by quality of life (employment, education, competitiveness – productivity, innovation). For this reason, this report also confirms the relevance of the updated "old" recommendations, which invite everyone to reach an agreement on policies to eliminate the problems identified, and to cooperate in the implementation of the agreed upon with public monitoring of the process of achieving the agreed upon.

Responsibility for changes – starting point for recommendations

1. Entrepreneurial capacity of a country depends on the entrepreneurial capacity of the individual, which is realized in interaction with the entrepreneurial environment. It is obvious from this definition that **responsibility for changes rests both at the level of each individual and at the institutional level.**

   A **social consensus** that entrepreneurship is a form of democratization of society is needed, because training for proactive, innovative and responsible behaviour empowers individuals, which increases inclusion capacity. From the perspective of such understanding of entrepreneurship, it is important

[48] Also, the European Semester report (of March 7, 2018) states that limited, or no progress has been made in 52% of recommendations. Croatia has been included in the European Semester cycles for the first time in 2014.

that the capacity for entrepreneurial activity is evenly distributed in society, regardless of gender, age, educational structure, economic sector or region, and that **government policies serve to fulfil such expectations.**

Therefore, sustainable vitality of economic structure requires highly harmonized, but also differentiated policies to intensify activities in certain phases of the life cycle of economic structure.

2. Uniform quality of all components of entrepreneurial environment is a challenging but necessary goal, because the design of individual components depends on developmental heritage, political priorities, available resources (educated people and money) and social and cultural determinants in which entrepreneurial activity is taking place. However, knowing the (non)quality of components of entrepreneurial environment in own country and possibility of comparison with countries that have the best solutions, which is just what the GEM study allows, requires an analysis of good practice and the context in which such good practice has contributed to strengthening the connection between entrepreneurial activity and economic growth (through contribution to employment and gross domestic product). This is not the responsibility of only one ministry, but of **many ministries** (entrepreneurship, economy, education, science, justice, labour, regional development), **agencies and other institutions (universities, schools, financial institutions, NGOs, associations, media).**
3. A change of situation cane be ensured by **coordinated and simultaneous government policies** on creating stimulating entrepreneurial environment (primarily by eliminating administrative barriers), **educational institutions** (by enabling everyone to build their entrepreneurial competencies in the education process) **business and financial sector** (by strengthening competitiveness based on innovation and growth) and **individuals** (who will start business ventures because of perceived opportunity).
4. In order to make changes, **agreement and cooperation in the implementation of the agreed upon and public monitoring of execution** are needed – perspective of the European Semester and the **National Reform Programme** are the cornerstone of establishing responsibility at the institutional level.

Recommendations for individuals – responsibility for personal decisions

1. Since **entrepreneurial competence** is one of the eight lifelong competencies that everyone should have, it is essential that everyone, but especially young people, insist that the formal educational system provides adequate education for acquiring such competence **during formal schooling**, from primary school to faculty. The youth, teachers and parents should have an active role in that.
2. Complementary, each individual should take care to acquire such competence using other sources of informal **learning**.
3. Dissatisfaction with ones' quality of life should be turned into an entrepreneurial challenge by considering **self-employment**, with the prior acquisition of an adequate level of entrepreneurial competence.

Recommendations for institutions – more responsibility towards citizens

In order to better recognize the connection between recommendations based on the GEM 2017 study and planned activities within the National Reform Programme for 2018, listed together with each recommendation are activities from that Programme that have the potential to implement recommendations. In this way, additional information is provided about which areas identified as critical in the GEM study are not "covered" with due care of relevant institutions (ministries, financial, scientific and educational institutions...). Since GEM study is carried out in annual dynamics, many GEM indicators can be used to enrich indicators for measuring progress in achieving goals set by the National Reform Programme, and some other strategic documents as well. At the end of this chapter, there are several examples how some countries and international institutions do this.

1. **Cooperation and simultaneity, using the principle of open coordination:** harmonization of policies, strategies, programs and instruments is necessary at the ministry level. Without this, it will not be possible to solve numerous problems because of which a large number of components of entrepreneurial environment act as a constraint rather than support for entrepreneurial intentions and activities of people (e.g. lack of entrepreneurship education, lack of informal capital to support innovative and growing business ventures, lack of specialized business services), especially at the "regional" level within Croatia.

National Reform Programme:

1.3.7. Introduction of an integrated strategic planning and development management system

2. **Simplification of the regulatory framework** in which entrepreneurial activity is taking place must be a priority, because without this it still would not be possible to exploit "windows of opportunity" that open up due to market dynamics.

   National Reform Programme:

   1.1.2. Administrative relief of entrepreneurs and the economy and analysis of parafiscal charges

   1.1.4. Electronic procedure for starting a business

   1.1.5. Unification of economy inspection services

   1.1.6. Further development of electronic public procurement

3. Initiate policies / programs to encourage balancing of entrepreneurial activity with regard to gender, age, sectors and "regions".

   National Reform Programme:

   3.2.1. Raising social security of families with children and ensuring quality care services for early childhood and pre-school children and promoting balance between business and family life

4. Strengthen the **innovation capacity** of the economy through encouraging cooperation between research institutions and the economy, and internationalisation of research initiatives. In order to maintain or even increase employment, it is necessary, in addition to survival, to ensure a greater share of growing business ventures. Just starting business ventures and their "maturing" without the capacity of contributing to the creation of new value, with a low ratio of new and "established" business ventures merely ossifies unproductive and uncompetitive entrepreneurial structure.

   National Reform Programme (monitoring the achievement of Europe 2020 objectives):

   2.1.1.1. Adoption of the Act on State Aid for Research and Development Projects

   2.1.1.2. Adoption of the Ordinance on the Criteria for Granting Aids for Research and Development Projects

   2.1.1.3. Innovation vouchers

   2.1.1.4. Innovations of newly established SMEs - Phase II

   2.1.1.5. Integrator Grant Scheme

   2.1.1.6. Proof of innovative concept for the private sector

   2.1.1.8. Phase II of the IRI competition

   2.1.1.9. Adoption of the Act on Scientific Activity and Higher Education

   2.1.2.1. Financing activities with the aim of encouraging applications to international competitive projects within the EU Framework Programme for Research and Innovation Horizon 2020

   2.1.2.2. Employment of young scientists through the "Young Researchers' Career Development Project – Training of Doctoral Students" within the Operational Programme Efficient Human Resources

   2.1.3.1. Recording the use of research infrastructure in the Republic of Croatia

   2.1.3.2. Signing and confirming the Agreement between the Republic of Croatia and the European Space Agency on space cooperation for peaceful purposes

   2.1.3.3. Signing the Contract on Croatia becoming a member of CERN.

5. **Increasing the quality of public administration** is one of the components of entrepreneurial environment that plays an important role in creating a stimulating environment in which entrepreneurs operate.

   National Reform Programme:

   1.3.1. Revision of the salary determination system

1.3.2. Rationalisation and normative regulation of organisation and operations of public administration

1.3.3. Rationalisation of the system of legal entities with agency type authority

1.3.5. Rationalisation of state information infrastructure

1.3.6. Improving the provision of electronic services and access to information for citizens and businesses

6. Strengthen the **state venture capital fund** for financing innovative and growing small and medium businesses and provide tax breaks for those who act as business angels.
7. Develop and implement a **system of monitoring and evaluation of government policies and programs** and ensure public availability of such information, keeping in mind the Think Small First principle (think about small businesses first).

National Reform Programme:

3.1.2. Improve budgetary planning, expenditure control and fiscal statistics

8. Develop a framework for **statistical monitoring of activities of small and medium businesses** and make it publicly available (connect statistical databases on business performance, ownership, import / export activities, and add indicators on innovation), because without that it is impossible to provide comparative information with which individual businesses can be measured (sector, the best). The availability of statistical information at the sub-national level is very incomplete and asynchronous, which significantly impedes regional development management.
9. **Professional infrastructure** that provides services to those who are starting entrepreneurial activity and those who want to develop innovative business ventures with growth potential must ensure a wider spectrum and a higher level of services, particularly those that help reduce the number of business failures (identifying opportunities, competencies, financial literacy) and those that contribute to increasing the competitiveness and internationalisation (design, more sophisticated financial literacy, managerial empowerment, competitive intelligence…), because numerousness of institutions does not solve the issue of the lack of quality services for entrepreneurs.

National Reform Programme:

1.1.3. Liberalisation of the market of services

10. **The media and education** must recognize their role and responsibility for the low level of social and cultural norms (non-supportive value system) in relation to the valuation of entrepreneurial activity and shape their programs and activities based on that.

National Reform Programme:

2.1.4. Raising the quality, relevance and attractiveness of adult education programs and lifelong learning

2.1.5. Improving the quality and relevance of study programmes and representation of professional practice

2.1.6. Improving the effectiveness of funding of higher education

2.2.1. Preparation and implementation of the pilot phase of curriculum reform

2.2.2. Establishment of a system for development of digitally mature schools

This connecting of recommendations with activities from the National Reform Programme for 2018 shows a strong government focus on innovation, public administration, education and regulatory framework. At the same time, activities of the National Reform Programme do not cover some critical areas (market of alternative sources of funding, statistical monitoring of the small and medium business sector). Recommendations have not been sufficiently used in some areas (for example, in the area of professional services market).

Perspective of European Semester, National Reform Programme and GEM study

Since 2014, the European Union monitors on an annual basis each member's progress in achieving structural reforms and correcting macroeconomic imbalances, and achieving Europe 2020 objectives, using the European Semester methodology.

Perspective of European Semester[49] enables a better understanding of the relevance of the results of the GEM study for designing reforms, policies and programs which should eliminate constraints in achieving sustainable economic growth.

The European Semester report for 2017 states that the recovery of the Croatian economy will also continue in 2017 (with a GDP growth rate of 3.2%). Lower growth rates are forecast for 2018 and 2019 (2.8% and 2.7%). Insufficient growth potential is based mostly on long-term low productivity and low, even declining, use of human resources. After this short-term recovery by 2018, without significant structural reforms in the mid-term period, Croatia will return to its growth potential of around 1%, which is lower than the potential of countries that are also "catching up".

Evaluation of the implementation of recommendations for 2017 should be observed in the timeframe from 2014 when they were formulated for the first time – in 48% of recommendations, some progress was observed (5% was fully implemented, 12% significantly and 31% to some extent), but for 52% of recommendations limited or no progress in implementation is noted (33% limited, 19% none).

Critical points that require reform activities and are specifically related to strengthening the competitiveness of the Croatian economy:

- It is especially pointed out that no progress has been recorded in the implementation of recommendation #4 (reduce the fragmentation and improve the functional distribution of competencies in public administration).
- Competitiveness and investment activity are exposed to numerous obstacles and constraints stemming from the business environment. Complicated entrepreneurship ecosystem hinders faster growth of the more productive business.
- Low performance of the educational system, which is stagnating or even deteriorating, urgently requires radical reform, which, among other things, must enhance the experiential learning dimension (connection with the needs of the business sector). The fact that 29.3% share of young people with tertiary education in the 30-34 years age group is significantly below the EU average of 39.1% (2016) is also a reason for concern, and Croatia's target for 2020 is 35%. Unemployment of persons with completed tertiary education in 2016 is 7.8%, by which Croatia holds the 4thplace in the EU. Croatia is significantly lagging behind in training or retraining of adults (only 3% of adults aged 25-64 years have had some form of education, compared to10.8% in the EU).
- Low allocation for research and development (0.84% of GDP in 2016) does not stimulate cooperation between research institutions and the business sector, nor does guarantee that Croatia will achieve its nationally set Europe 2020 goal of 1.4% (the EU's goal is 3%). Such a distance from the set target only shows that science and innovation are not in the focus of the national strategy. Responsibility for policies in the field of research and innovation is shared by three ministries: science and education; entrepreneurship and crafts; regional development and EU funds. Inadequate stimulation of cooperation with the business sector by the academic sector significantly discourages commercialization of research results.
- Underdevelopment of alternative forms of business venture financing. Access of small and medium businesses to bank loans is improving, but alternative forms of funding (venture capital, crowdfunding) are underdeveloped.
- Reforms in the area of professional services are still very limited because of which the market for these services remains highly controlled.

The planned employment rate of 65.2% in 2020 is being achieved (from 58.3% in 2013 to 65.6% in Q3 2017). But even when Croatia achieves its national Europe 2020 objective, the employment rate will still be among the lowest in the EU and significantly below the planned 75% for the EU.

[49] 2018 European Semester: Assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011 Country Report Croatia 2018 Including an In-Depth Review on the prevention and correction of macroeconomic imbalances, Brussels, Mar 7, 2018 SWD(2018) 209 final (Accompanying the document COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN CENTRAL BANK AND THE EUROGROUP)

The European Semester report for 2017 has identified the following as particularly critical areas:

- Level of employment rate (% of population aged 20-64 years),
- Level of individual digital literacy,
- Youth not in employment, education or training (% of total population aged 15-24 years).

The National Reform Programme for 2018[50] refers to the European Semester report for 2017. The key role of the Programme is in designing interventions based on analytical and research findings, and in connecting various institutions for their implementation. National Reform Programme (NPR) envisages 58 interventions in 2018, with identified carriers, deadlines, as well as identified indicators for monitoring their achievement. Text of the introductory part of the National Reform Programme for 2018[51] is used to present the key interventions, with the focus on activities that are particularly relevant for entrepreneurship and which are in a recognizable relation with the findings of the GEM study.

Three main objectives of the National Reform Programme:

1. Strengthening economic competitiveness
2. Aligning education with the labour market
3. Sustainability of public finances

For the achievement of these objectives 58 reform measures in 11 reform areas are defined (a detailed description of activities, deadlines, carriers and indicators is given in Appendix 1 of the National Reform Programme for 2018).

1. Strengthening economic competitiveness

1.1. Improving the business environment

1.2. Improving the disposition and management of state assets

1.3. Improving the public administration

1.4. Improving the efficiency of the judicial system

"Improvement of the business environment is a precondition for improving the competitiveness indicators of the Croatian economy according to relevant global methodologies. An emphasis will be placed on improving the regulatory framework for encouraging innovation, entrepreneurship and investment. Further reduction of administrative costs and parafiscal charges and unification of economy inspection services will additionally free entrepreneurs from the costs of excessive bureaucracy. Liberalisation of the market of services and digitisation of business start-up procedures will open up more opportunities for easier entry of new entrepreneurs and market competition, affecting productivity, process, employment, investment and innovation. Encouraging the use of digital platform and tools, including e-Invoice and e-Procurement, will significantly reduce operating costs."

"Activities will be undertaken in order to increase the efficiency of institutions, including simplification of rules and acceleration of administration and court processes, primarily through improving the provision of electronic services and access to information for citizens and businesses. Increasing the efficiency of public administration will be achieved through effective human resources management with a revision of the payroll system. An integrated system for strategic planning and development management will be established as a basis for budget allocation, monitoring of achieved results and systematic evaluation of the implementation of strategies, plans, programs, activities and projects, aimed at increasing the quality of formulation of public policies and their implementation."

"In order to increase the efficiency of providing judicial services and speed up court proceedings, electronic communication between courts and other participants in court proceedings will be introduced. Further reorganisation of the judiciary system continues with a special emphasis on the merging of misdemeanour courts with municipal courts for more rational use of judges and officials' potentials, which will help shorten the length of court proceedings and reduce the number of unresolved cases."

[50] Adopted at the session of the Government of the Republic of Croatia on April 26, 2018. Full text is available at: https://vlada.gov.hr/UserDocsImages/Sjednice/2018/04%20travnja/93%20sjednica%20VRH/93%20-%201.pdf

[51] National Reform Programme 2018, April 2018, p. 5-8

2. Aligning education with the labour market

2.1. Education in alignment with the needs of the labour market

2.2. Implementation of the curricular reform

"The Croatian educational system, in particular the development of vocational education and training, is moving towards changes and adjustments oriented to quality and efficiency, greater connection with the labour market and a greater share of learning methods focused on work-based learning. As part of the further implementation of the Croatian Qualification Framework (CROQF), tools for the adoption of occupational standards will be developed, and the Register of the List of Individual Occupations according to the National Classification of Activities (NCA) will be established, in order to improve the quality and relevance of all educational programs in accordance with the real needs of the economy and society. Instruments for improving the quality and relevance of adult education and lifelong learning programs, as well as study programs will be strengthened to ensure their alignment with the real needs of the economy and society. Implementation of the pilot phase of curricular reform is the first step towards achieving the goal of comprehensive curricular reform, and establishment of a system for development of digitally mature schools will integrate modern methods of learning and teaching into the educational process."

3. Sustainability of public finances

3.1. Strengthening the framework for public financial management and implementation of fiscal consolidation

3.2. Promoting demographic renewal

3.3. Enhancing the social benefits system

3.4. Ensuring the sustainability and adequacy of the pension system

3.5. Ensuring financial stability, sustainability and quality of the healthcare system

"Focus on fiscal rules, especially the provisions on the medium-term budgetary objective and the constraint on growth of budgetary expenditures, will contribute to preserving long-term sustainability of public finances. Implementation of prudent fiscal policies, in addition to long-term impact on reducing the imbalance in public finances, will create preconditions for reducing tax burden and will expand manoeuvring space for counter-cyclical action of fiscal policy, and thereby increase the economy's resilience."

"One of the tasks set is to empower families to raise children, as well as to improve the material situation of the family. Investments will be made to improve the availability of services for parents and children involved in programs of early and pre-school education, in order to ensure equal opportunities for every child in the Republic of Croatia regardless of their place of residence or socioeconomic status of their family."

National Reform Programme for 2018 identifies 16 ***measures for achieving the za objectives of the Europe 2020 strategy*** in the areas of employment, research and development, climate and energy, education and fight against poverty and social exclusion.

"In the area of employment, the implementation of active employment policy measures continues, with the aim of increasing the employment rate for men and women aged 20-64 years.

With the aim of improving the environment for research and development, efforts will be made to strengthen the national innovation system and innovation potential of the economy, strengthening human resources in science and national research infrastructure with public access.

In the area of climate change and energy sustainability, it is planned to move to a circular economy, and continue promoting the use of energy from renewable sources and energy efficiency.

In the area of education, the implementation of the scholarship program for students of lower socioeconomic status continues.

With the aim of reducing poverty and social exclusion, activities related to providing humanitarian aid in kind and other support programs for the neediest are continued. For the purpose of better routing of the social welfare program for people and families at risk of poverty, the institutional capacities of the social welfare system will be strengthened."

The GEM study provides and insight into changes in entrepreneurial activity and changes in the perception of the quality of individual components of entrepreneurial environment. Since progress in achieving the objectives set by the National Reform Programme is measured by "hard" indicators, GEM study provides opinion and perception of a representative sample of the adult population (representativeness is based on gender, age and place of residence), and experts. This enriches the cognitive base on the effects of government measures, which contributes to more effective interventions in the existing policies and programs and to designing new ones.

Of the 54 countries that participated in the GEM study in 2017, ministries or government agencies were partners in 24 countries, not only as financial support but also as beneficiaries. In most other countries, these were banks, employers' associations, telecommunication companies or international aid funds of individual countries (e.g. Canada, USA...), which co-financed GEM research in countries with which they have an aid program.

Several examples how individual countries use GEM research in analyses and / or policies design[52]:

[52] The Influence of GEM on Policy 2017/18, Global Entrepreneurship Monitor, 2017

Germany:

Since 2008, the Commission of Experts for Research and Innovation (Expertenkommission Forschung und Innovation) on behalf of the Federal Government reports to the German Parliament on research, innovation and technology competitiveness of Germany compared to other countries. They use GEM data in their reports.

The Association of German Chambers of Commerce and Industry (Deutscher Industrie- und Handelskammertag) is the central organization for 79 chambers in Germany. They use GEM data in their annual reports on newly started business ventures.

Sweden:

The results of the GEM study are used by government institutions to design support programs for entrepreneurial activity, on every level (e.g. Swedish Agency for Economic and Regional Development, councils at the local government level). Political parties use GEM data in the promotion of their programs, and the Swedish GEM team leader led the development of the latest government report on entrepreneurship in 2016 (in cooperation with the Ministry of Economy).

Slovenia:

The results of the GEM study are regularly used in the preparation of various government documents, such as Slovenian Industrial Policy, Slovenia's Smart Specialisation Strategy and Operational Programme for the Implementation of the EU Cohesion Policy in the Period 2014-2020. Various ministries use GEM indicators to prepare their documents: Ministry of Economic Development and Technology in the preparation of the Programme for Implementation of Financial Aids 2015-2020; Ministry of Labour, Family, Social Affairs and Equal Opportunities in the preparation of the National Programme for Equal Opportunities of Women and Men 2015-2020.

Slovakia:

The Ministry of Economy, in cooperation with the Slovak Business Agency, regularly uses GEM data in annual reports on the status of entrepreneurial environment in Slovakia.

Spain:

In Spain, the GEM study is conducted on the largest sample, which makes it possible to obtain very detailed information on entrepreneurial capacity at the subnational level. In addition to Banco Santander, 15 regional governments also participate in funding the GEM study, which use the results to design various programs in the field of entrepreneurship, regional development, strengthening innovative capacity, improving the entrepreneurial environment... Basque: Interinstitutional Plan for Supporting Entrepreneurial Activity; Madrid: Madrid without Taxes document; Catalonia: Support Programme for Entrepreneurs.

Israel:

The Israeli government, ministers, members of parliament (Knesset), senior public service officials and business sector representatives are regularly informed about the results of the GEM study, on annual basis. In 2011, as a result of findings from the GEM study, a government unit for small and medium businesses was established, which is responsible for programming support for businesses with up to 100 employees and $25 million in annual revenue.

OECD:

In addition to using the GEM study at the level of national policies, the OECD uses GEM indicators in its publications on entrepreneurship, such as the series on lost entrepreneurial capacity and policies for inclusive entrepreneurship (women, youth, elderly, people with special needs, migrants...) in which Croatia is also included[53].

[53] OECD/European Union (2017), The Missing Entrepreneurs 2017: Policies for Inclusive Entrepreneurship, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264283602-en

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- Gross domestic product per capita, 2015

GROSS DOMESTIC PRODUCT PER CAPITA FOR REPUBLIC OF CROATIA, NUTS 2012 – 2nd LEVEL AND COUNTIES, Table 12.1.2.2.

https://www.dzs.hr/Hrv_Eng/Pokazatelji/Bruto%20domaci%20proizvod.xls

- Population, 2016

Statistical Yearbook of the Republic of Croatia 2017, Croatian Bureau of Statistics, Zagreb, December, 2017, https://www.dzs.hr/Hrv_Eng/ljetopis/2017/sljh2017.pdf

- Vital index (live births per 100 deaths), 2016 – Statistical Yearbook of the Republic of Croatia 2017, Croatian Bureau of Statistics, Zagreb, December, 2017,, https://www.dzs.hr/Hrv_Eng/ljetopis/2017/sljh2017.pdf

- Education, 2011

Census of Population, Houses and Dwellings 2011, Croatian Bureau of Statistics

Croatian Bureau of Statistics, Statistical Report No. 1582, 2016, compiled by: Croatian Chamber of Economy, County Chamber Osijek

- Unemployment, 2017

Croatian Employment Service and Croatian Pension Insurance Institute (monthly data), data obtained from Croatian Pension Insurance Institute, Regional Office Osijek, January 17, 2018

- Risk of poverty rate, 2011

In 2016, the Croatian Bureau of Statistics, in collaboration with the World Bank, conducted the "Mapping and assessing the geographical distribution of poverty and social exclusion in small areas of the Republic of Croatia" survey. Survey results using data on disposable income and consumption are presented in two separate reports at

https://www.dzs.hr/Hrv/DBHomepages/Osobna%20potrosnja%20i%20pokazatelji%20siromastva/Osobna%20potrosnja%20i%20pokazatelji%20siromastva.htm

Because of the fact that the European Union produces annual poverty risk estimates using the income approach, poverty rate indicators calculated using this approach are used in this publication

https://www.dzs.hr/Hrv/DBHomepages/Osobna%20potrosnja%20i%20pokazatelji%20siromastva/Metodologija_SILC_WB.pdf

- Employment, 2015

Data from financial statements of companies provided by FINA was used.

- Development index, 2013

Values of development index and indicators for calculation of development index at county level 2013, Ministry of Regional Development and EU Funds, December 27, 2013

https://razvoj.gov.hr/UserDocsImages//O%20ministarstvu/Regionalni%20razvoj/indeks%20razvijenosti/Dosada%C5%A1nji/2013//Vrijednosti%20indeksa%20razvijenosti%20na%20%C5%BEupanijskoj%20razini%202013..pdf

- Competitiveness, 2013

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- Number and structure of business entities by counties, situation on June 30, 2017

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Appendix 1

GEM Croatia – sample, instruments, process of data collection and harmonization of results

The GEM conceptual framework (Figure 1) presumes complementarity of different components of the economic ecosystem (from the basic ones to those that support innovation and entrepreneurship) and their interaction with the perception of social values focused on entrepreneurship and individual attributes and behaviours. The intensity of entrepreneurial activities is a synergistic effect of this interaction, and the ability of a national economy to achieve prosperity at the level of the individual and the community (measured by the level of employment and gross domestic product per capita) depends on the capacity and quality of entrepreneurial activities in the country.

The GEM study is based on data collected from three sources: data collected through surveying a representative sample of the adult population, data collected through surveying and interviewing experts whose knowledge contributes to understanding of entrepreneurship, and data collected from standardized secondary international and national databases.

Sample of adult population

The most important set of data in the GEM study is obtained by surveying the adult population aged 18-64 years. Each year, on a random sample of the adult population (at least 2,000 people), using a specially designed standardized questionnaire, data is collected with the aim to measure entrepreneurial activity at the national level. In 2002, 2003 and 2004 data in Croatia was collected using the "face to face" method, and since 2005 telephone collection of data is used. Surveying the adult population is carried out by IPSOS PULS, exclusively via landline telephones.

Each sample of data is weighted with appropriate weights according to gender and age in order to get the data that represents active working population in the country. Sample prepared in such a way for each year is sent to the Global Entrepreneurship Research Association consortium, whose coordination team monitors quality and harmonization of data. In the data harmonization process, weights in the sample are adjusted according to the gender and age structure in accordance with the 2011 Census of Population.

Structure of sample with regard to gender and age, in % - 2015, 2016 and 2017 (weighted values)

Total sample of respondents		2015.	2016.	2017.
Gender	Women	50	50.2	50.4
	Men	50	49.8	49.6
Age	18-24	13.3	13.2	13.4
	25-34	21.7	21.5	21.3
	35-44	20.6	20.7	20.7
	45-54	23.0	23.0	23.2
	55-64	21.4	21.7	21.5

A standardized questionnaire is used to collect data from a random sample of the adult population aged 18-64 years on the perception of social values relevant for entrepreneurial activity, individual attributes on which entrepreneurial behaviour depends, and on entrepreneurial activity (from starting a new business, through growth of the business, to exit from entrepreneurial activity). Given that data on gender, age, education level, household and regional affiliation is collected, it is possible to gain insight into entrepreneurial capacity of the country from different perspectives.

Sample of experts

The second relevant source of data in researching entrepreneurial activity are experts' attitudes and opinions gathered through a standardized questionnaire. The questionnaire is composed of several statements that are grouped into nine components of the entrepreneurship ecosystem:

- Access to money
- Government policies towards entrepreneurship
- Government programs for entrepreneurship
- Entrepreneurship education

- Research and development transfer
- Commercial and professional infrastructure for entrepreneurship
- Openness of domestic market
- Physical infrastructure
- Cultural and social norms

The sample of experts consists of entrepreneurs – practitioners, scientists who are involved in research of entrepreneurship, officials in government institutions, experts from the financial, education and non-government sectors, and experts in the field of infrastructure (physical, legal and commercial). Experts are selected on the basis of their reputation and experience, meaning that they do not represent a representative sample of experts in the field of entrepreneurship. The lowest number of experts must be 36, that is, 4 experts per one component of entrepreneurial environment.

In 2017, experts evaluated entrepreneurial environment using a standardized questionnaire in which components of entrepreneurial environment are described with 54 statements (typically, one component is described with 3 to 8 statements). By expressing their agreement / disagreement with individual statements using ratings 1 to 9 (where 1 means complete disagreement with the statement, which means unsatisfactory quality, and 9 complete agreement, which means high satisfaction with quality) evaluation of availability and quality of each individual component of entrepreneurial environment [54].

Collecting experts' opinions is carried out online. By analysing the collected data, experts' attitudes are quantified, thereby measuring the perception of the extent to which individual components of entrepreneurial environment in the country foster or constrain entrepreneurial activity.

Statements are grouped so that they form measurement instruments, which make it possible to interpret experts' perceptions of individual components of entrepreneurial environment. High values of Cronbach's alpha test indicate high reliability of measuring instruments, which gives credibility to evaluations of quality of components of entrepreneurial environment. In 2017, Cronbach's alpha values for individual measurement instruments are:

Components of entrepreneurial environment	Cronbach's alpha 2017
Access to money	0.861
Government policies towards entrepreneurship – priorities	0.822
Government policies towards entrepreneurship – taxes and regulations	0.785
Government programs for entrepreneurship	0.886
Entrepreneurship education – primary and secondary education	0.903
Entrepreneurship education – tertiary education	0.871
Research and development transfer	0.851
Commercial and professional infrastructure for entrepreneurship	0.851
Openness of domestic market – dynamics	0.932
Openness of domestic market – entry barriers	0.817
Physical infrastructure	0.816
Cultural and social norms	0.911

Harmonized database, which is produced by the GERA coordination team, is used for the preparation of the global report and national reports.

Standardized international / national set of data

In order to provide a more complete picture of the profile of a national economy, in addition to primary data on entrepreneurial activity, GERA coordination team also collects various standardized macroeconomic data from secondary sources such as World Bank, World Economic Forum, International Monetary Fund, OECD and United Nations. This data is used to create profiles of countries involved in the GEM study.

For creating profiles of territorial units at the sub-national level (counties), GEM team Croatia uses available data on population, vital index, gross domestic product, development index, competitiveness index, employment, unemployment, poverty risk and business demography from databases of the Croatian Bureau of Statistics, Financial Agency, the Ministry of Regional Development and EU Funds, and the National Competitiveness Council.

[54] Likert scale of 1 to 9 has been used since 2015. For comparison with the previous years, it is necessary to perform transposition to a scale of 1 to 5. Even without transposition, it is possible to compare to what extent individual components foster or constrain entrepreneurial activity, since on a scale of 1 to 5, rating 3 is a separator of the fostering (values above 3) and constraining effect of individual components (values below 3).

Appendix 2 - Experts for the evaluation of the quality of entrepreneurial environment who participated in the GEM study in 2017*

No	Name	Position	Institution
1.	Adrović Zdenko	Director	Croatian Banking Association – CBA
2.	Alpeza Mirela	Director	SMEs and Entrepreneurship Policy Center – CEPOR
3.	Banović Dušan	Investment manager	Prosperus Invest Ltd.
4.	Barbarić Tomislav	Director	Centre for Entrepreneurship Osijek
5.	Blažević Nikola	Director, Controlling Department	HŽ Cargo Ltd.
6.	Bogdan Hrvoje	Director of Adizes Southeast Europe Zagreb branch office	Adizes Southeast Europe
7.	Brčić Ivica	Director of the Small Entrepreneurship Directorate	Erste Bank
8.	Bronić Mihaela	Senior scientific associate	Institute of Public Finance
9.	Brusić Anny	Director of the Small and Medium Sized Enterprises' Association	Croatian Employers' Association – CEA
10.	Burić Ivo	Assistant professor	University of Zagreb, University Department of Croatian Studies
11.	Cikač Vlatka	Lawyer	Law and Mediation Office Cikač
12.	Čižmek Berislav	Director, owner	CBBS Ltd.
13.	Đidara Vedran	Senior analyst	Croatian Agency for SMEs, Innovation and Investments HAMAG BICRO
14.	Galičić Hrvoje	Advisor to the Board of Directors	Croatian Bank for Reconstruction and Development – HBOR
15.	Has Josip	Director, owner	KIT biro Ltd.
16.	Horvat Jako	Head of the Department of Economic Development	Regional Development Agency Međimurje – REDEA
17.	Jukić Maja	Director	National Centre for External Evaluation of Education
18.	Jurković Ratka	Entrepreneur, consultant	SvanConsulting, Zagreb
19.	Jurlina-Alibegović Dubravka	Scientific advisor	The Institute of Economics, Zagreb
20.	Keser Jasminka	Head of the Sector for Promotion and Development of Entrepreneurship and Crafts	Ministry of Economy, Entrepreneurship and Crafts
21.	Kiršić Tamara	Expert advisor	Istrian Development Agency – IDA
22.	Krstić Darija	Head of the Office for EU Funds, Professional and Development Projects with the Economy	Josip Juraj Strossmayer University of Osijek
23.	Lauc Gordan	Chairman of the Board, owner	Genos Ltd.
24.	Lenac Kristijan	Assistant professor	University of Rijeka, Faculty of Engineering
25.	Madžarević Šujster Sanja	Senior economist	World Bank, Croatia Country Office
26.	Mrakovčić-Supek Višnja	Associate	European Bank for Reconstruction and Development – EBRD
27.	Nikšić Nikola	Business advisor	Konter Ltd.
28.	Oberman Mirna	Director, owner	Egzakta poslovne usluge Ltd.
29.	Oršanić Nikola	Director, owner	*Acta, non verba Ltd.*
30.	Paun-Jarallah Ankica	Advisor	Croatian Employment Office
31.	Plazonić-Bogdan Miljenka	Co-founder, advisor	Impact HUB
32.	Pudić Dalibor	Member of the Board	Croatian Energy regulatory Agency – HERA
33.	Pribanić Danijel	Lawyer	Law Office Pribanić
34.	Smokrović Maša	Director, owner	Institution for Health Care and Rehabilitation "Helena Smokrović"
35.	Suknaić Martina	Director, owner	Anquiro Ltd.
36.	Šimić-Banović Ružica	Assistant professor	University of Zagreb, Faculty of Law
37.	Šonje Velimir	Director	Arhivanalitika Ltd.
38.	Švarc Jadranka	Scientific advisor	Institute of Social Sciences Ivo Pilar
39.	Topčić Ivan	Director, owner	TIM Kabel Ltd.
40.	Vrdoljak-Raguž Ivona	Associate professor	University of Dubrovnik
41.	Vukšić Doris	PR, marketing manager	HAMAG BICRO
42.	Završki Neven	Advisor	Croatian Chamber of Trades and Crafts

*Information about the position and the institution in which the expert was engaged refers to the time when the interview took place.

Appendix 3

Nacionalni timovi i sponzori koji su sudjelovali u GEM istraživanju u 2017. godini

National Team	Institution	National Team Members	Funders	APS Vendor	Contact
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		Paul Reynolds			
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			Universidade Federal do Paraná (UFPR)		

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		Etienne St-Jean			
		Nathan Greidanus			
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		Cooper Langford			
		Karen Hughes			
		Harvey Johnstone			
		Adam Holbrook			
		Brian Wixted			
		Blair Winsor			
		Chris Street			
		Horia El Hallam			
		Yves Bourgeois			
		Kevin McKague			
		Allison Ramsay			
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