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Investments' background of entrepreneurial zones in Croatia

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ABSTRACT

The topic of this paper is entrepreneurial zones as a part of entrepreneurial infrastructure in Croatia as a tool for gaining economic development. The purpose of this paper is to analyse different sources of investments in entrepreneurial zones in counties/municipalities on different development levels; who invests more: the state, the county itself, the municipality or the private sector. The research is carried out using the development index for municipalities and counties of the Ministry of Regional Development and European Union Funds and investments data of the State Audit Office. The paper is the first, not only in Croatia, to deal with investment distribution in entrepreneurial zones. The authors found that within groups of poorer counties, more developed municipalities invested more in their entrepreneurial zones, but also, they received more money from the state and county. That is not the case within the group of most developed counties, where there is no link between the development index of their local government units and investments by the county, the state and other sources. Further, municipalities in more developed counties on average received fewer investments from municipality and the state than they would have to get based on their development index.

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1. Introduction

Entrepreneurship has played and is still playing an important role in both economic and social development. A constant search for new frontiers is in human nature; it is always looking to find ways to take the quality of its living to a higher step. Boosting entrepreneurship through business zones that are part of entrepreneurial infrastructure could be a good tool of regional policy.

The European Union (E.U.) regional policy is the main investment policy that targets and finances all regions and cities in the E.U. Union through three main funds: E.U. Regional Development Fund, Cohesion Fund and European Social Fund. Its goals are: to support job creation, business competitiveness, economic growth, sustainable development and improvement of citizens' quality of life. (European

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Commission, 2016) Therefore, through E.U. funding it is possible to boost and enhance performances of entrepreneurial infrastructure and achieve the aforementioned positive outcomes such as job creation.

The Croatian new regional policy strategy has a strategic goal to boost competitiveness of regional economy and employment in which, up to 2020, one of the priorities will be to develop the economic infrastructure on a regional and local level. The related measure is defining and implementing clear criteria for establishing and financing entrepreneurial zones which develop entrepreneurial infrastructure (Croatian Ministry of Regional Development and E.U. funds, 2016). The ranking of counties by competitiveness fits in with ranking of counties by G.D.P. and the development index, so in the most competitive/developed counties entrepreneurial zones have a more vital role, the migration balance is positive and the educational structure is more favourable. The entrepreneurial zones are seen as a booster of economic and social development, which is the goal of the state, the counties and municipalities. In Croatia there are more entrepreneurial zones in the central part than in the coastal region, as more enterprises have opened in the central region compared with the Adriatic coast, where the density of enterprises by surface is a little bit higher too. So if entrepreneurial zones are really enhancing entrepreneurship and development, the question is, are the state, the counties and municipalities following the guidelines of strategies, laws, and plans on European, national, regional or local levels to open and develop them?

The purpose of this paper is to analyse different sources of investments in entrepreneurial zones in counties/municipalities on different development levels. In the research conducted by using comprehensive secondary data of the Ministry of Regional Development and E.U. Funds and State Audit Office, the authors analysed in which counties and municipalities was the most invested in the period up to 2013, because newer data are not available. Furthermore, the authors want to find out if there are differences between investing in counties/municipalities at different stages of development; that is, who invests more, the state, the county, the municipality or the private sector. As the history of entrepreneurial zones has shown, governments who have invested in zones opening to revitalise undeveloped areas by boosting entrepreneurship is positively linked to economic development.

2. Literature review

Entrepreneurship in all its complexity is important for the economic development of a town, municipality, region and state.

From that point of view entrepreneurship has played an important role not only in today's society, but also in some ancient civilisations. According to Hudson (2010, p. 9) most of the techniques that would become basic commercial practice in classical antiquity were already developed in the third millennium B.C., in the Bronze Age:

- money, together with uniform weights, measures, prices needed for account – keeping and annual reports;
- charging of interest;

- profit-sharing arrangements between public institutions and private merchants ranging from long-distance trade to leasing land, workshop and retail beer-selling concessions.

Therefore, entrepreneurship was important and still is – only the term and context of its role has changed. Firstly, entrepreneurs were called 'merchants' and presented the most important part of the archaic trade. However, who or what galvanised all those merchant (entrepreneurial) activities? What was the motivation? Was it similar to nowadays? Was it the money, fame? In Babylonia new commercial strategies were created to manage estates and to supply the palace and its armed forces; in ancient Rome and Greece wealthy families controlled handicraft production, trade and credit directly, so classical antiquity did not have such a positive view of them, they were considered demeaning and corrupt as they gained surplus over the years, often in a way that had negative impacts on the whole society (Hudson, 2010). Today we are connecting entrepreneurship with economic and social development, but that was not the case in history, as presented before, they did not gain their wealth from economic growth. Nevertheless, through the years and centuries, their role changed and today entrepreneurs and entrepreneurship are seen with new importance. According to Newbert (2003) today's entrepreneurs tend to temper their economic motives with more altruistic ones in creating successful new ventures which significantly benefit society in a number of ways.

So when did theorists start connecting entrepreneurship with development? As 'entrepreneur' is a word of French origin, dating from the Middle Ages, which was used for the man in charge of great architectural works such as castles, fortifications, public buildings, abbeys and cathedrals (Hoselitz, 1960, p. 237), we cannot see the direct link. Moreover, the first to use the term 'entrepreneurship' in an economic context was a French thinker, Cantillon (Herbert & Link, 1988; Binks & Vale, 1990). Another European thinker, this time Adam Smith (1776), was the first to connect entrepreneurship with economic development and society welfare. For the French thinker Say, an 'entrepreneur' is someone who enhances development and economic changes which are made by connecting different production factors in conditions of taking a risk (Schoorl, 2013).

In the second part of the nineteenth century, theorists started looking differently at entrepreneurship and connecting it with innovation. Schumpeter concluded that economic development is not based on non-economic forces, but on innovation. (Bull & Willard, 1993).

There are many views about who an entrepreneur is, but they all have some elements in common. It is possible to conclude that an entrepreneur is an individual who has innovative characteristics and a job, and is a wealth creator and risk taker.

Small and medium enterprises became so important that in 2015 they made up 99% of all enterprises in Europe (EUROSTAT, 2017) and in Croatia 99,7% (CEPOR, 2017). That is to say, a new perception of economy came about during the 1970s, in which economy of the scale was no longer an important economic development tool: its place was taken by small and medium enterprises. Schumacher (1973) explained that the giant organisations would lead to economic inefficiency at the

macroeconomic level, to pollution and to improper working conditions with the growth of specialisation; he therefore proposed an alternative system of intermediary technologies based on small production units. The fact is that this kind of enterprise is more flexible to changes in the environment, while on the other hand, as bigger enterprises, they employ people, and bring about an effect on the innovation potential and technology adaption. Brock and Evans (1989) explained the importance of small and medium enterprises through six hypotheses:

- technological change reduces the importance of scale economies in manufacturing;
- increased globalisation and the accompanying competition from a greater number of foreign rivals render markets more volatile;
- the changing composition of the labour force, towards a greater participation of women, immigrants, young and old workers, is more conducive to smaller than larger enterprises, due to the greater premium placed on work flexibility;
- a proliferation of consumer demand away from standardised and mass-produced goods towards tailor-made and personalised products facilitates small producers serving niche markets;
- deregulation and privatisation facilitate the entry of new and small firms into markets previously protected and inaccessible; and
- the increased importance of innovation in high-wage countries reduces the relative importance of large-scale production, fostering entrepreneurial activity instead.

Some authors think that globalisation was and is the main cause of entrepreneurship becoming so important, because if an economy wants to be competitive it should focus on knowledge-based economic activities (Audretsch & Thurik, 2002). 'This kind of economy is named entrepreneurial economy. So, due to global changes, entrepreneurship is seen as a generator of economic and social development' (Kružić, 2007, p. 183).

Entrepreneurship and its impact on economic growth has been studied by various researchers, Wennekers and Thurik (1999), Carree and Thurik (1999), Audretsch and Fritsch (2002) all found that countries with higher rates of entrepreneurship have experienced higher growth rates. In 2002 research conducted in OECD countries over different time periods gave consistent results (Audretsch & Thurik, 2004), that an increase in entrepreneurship increases growth rate and reduces unemployment. Furthermore, Acs et al. (2007), and Braunerhjelm and Svensson (2009), found a positive relation between entrepreneurship and a country's economic growth. While Acs and Storey (2004) claim that, from a policymakers' perspective, first evidence in linking new firms with economic development, it's that an entrepreneur plays a key role, he reallocates away the resources, from low to higher value functions.

In order for successful development a stimulating entrepreneurial environment, which differs from one country to another, is crucial. All of a country's elements – such as cultural, technological, political and social – create and shape it. Moreover, government policies and development of physical infrastructure are very important tools.

In this regard, the Global Entrepreneurship Monitor in its research includes the entrepreneurial conditions framework (GEM, 2016). It refers to availability of

financial resources for business venture start-up, government policies and programmes for promotion of entrepreneurial ventures, quality of education and training for entrepreneurs, openness of the internal market and competitiveness, transfer of research and development results, and access to physical infrastructure, as well as cultural and social norms (CEPOR, 2017). The concrete situation of the further analysed country of Croatia shows that government policies towards the regulatory framework, entrepreneurial education and the transfer of the research results of the small and medium enterprise sector are the weakest components of the entrepreneurship ecosystem. These components were the weakest during all the analysed years which makes them a serious problem for the development of entrepreneurial activity in Croatia.

Thus all the complexity of developing and creating new business ventures is seen in the entrepreneurship ecosystem, today a predominant metaphor for fostering entrepreneurship as an economic development strategy (Isenberg, 2014). The entrepreneurship ecosystem consists of individuals, organisations or institutions. Organisations and individuals are presented as entrepreneurship stakeholders which may include the government, schools, universities, the private sector, investors, banks, research centres, etc. All these elements are connected in different ways, so hoping and thinking that entrepreneurship can function with only one of them is incorrect.

On the other hand, there is no evidence that increasing the number of start-ups *per se* or new businesses formation stimulates economic development, so Isenberg (2014) claims there is some evidence that goes the other way around, that is, economic growth stimulates new business creation and start-ups.

Although theories change, the fact remains that not so long ago development was connected with state investments for attracting factories and business people in undeveloped areas.

'Move to urban centres … and find a job' was a frequent statement during the 1950s and the 1960s of the last century, 'because towns were perceived as generators of the regional and national development' (Mrnjavac & Pašalić, 2000, p. 174). Investments in infrastructure were important tools of regional policy because among other things, physical infrastructure was unavoidable. Attracting firms in an undeveloped area by building a water and energy supply network, telecommunication and transport network was usual, because it was considered that infrastructure has similar effects to direct financial incentives, with the advantage of being more durable. Many governments started thinking differently during the 1970s, by reorienting focus on local activities and their importance, as a solution for having sustainable and durable development in places that were unattractive. Infrastructural policy is a part of regional policy which has an impact on entrepreneurs through building economic infrastructure via telecommunication networks, roads, scientific and educational infrastructure, technological parks, centres, incubators, and industrial and entrepreneurial zones. It can have a positive impact on mobile production factors, and attract firms to a particular area, but if the conditions are not realised fast enough, the infrastructure can become an additional factor of difficult regional development and can also exhaust it (Mrnjavac & Pašalić, 2000). Today innovation is seen as becoming more important every day, thus all levels of governance should invest in units that enhance it, together with formal and

continuous education, scientific research, technology transfers and professional consulting, together forming technology parks, incubators and technological centres.

Small and medium enterprises are crucial for creating, maintaining and improving competitive advantages of the state and regional and local government units (Vidučić, 2000). The state therefore, has an important role of creating a stable macroeconomic and investment environment. Enhancing and encouraging areas with low levels of regional and local development according to Vidučić (2000), is possible with an appropriate infrastructure – economic, educational, scientific, technological – that creates conditions for the establishment and growth of small and medium enterprises to revitalise the aforementioned areas.

The entrepreneurial infrastructure consists of legal, physical, financial and educational – advisory infrastructure. For the purposes of this article, the most important is the physical one, an incubation infrastructure that includes entrepreneurial zones, incubators, science and technology parks. The incubation infrastructure – technology parks – was first introduced in the United States in the 1950s, and they had a strong connection with universities. The incubator followed, the first of which was opened in Batavia. It is possible to conclude that Europe got the concept of entrepreneurial infrastructure from the United States, with the exception of entrepreneurial zones, whose founder was the British professor Hall (Jones, Dunse, & Martin, 2003). The United States adopted the entrepreneurial zones concept during the Regan era.

The reason for opening entrepreneurial zones in England was to develop and revitalise undeveloped areas, sometimes only in parts of a city which were problematic due to a hard economic situation that also led to social problems. They were and are government's economic plan, set in rounds. Today entrepreneurial zones in England have become a tool for boosting economic development based on entrepreneurship and new technologies, for example, biosciences, and digital and creative industries (Ward, 2016).

In Croatia the situation regarding entrepreneurial zones was confusing regarding definition, content and terms before the adoption of a law in 2013 which tried to systematise the disorder not only in terms and content, but also the situation on the ground. The attachment of entrepreneurial infrastructure with politics played a major role in its development, so with the change of the Croatian government, in accordance with the practice in other American and European states, some parts of the law were not implemented. The fact remains that entrepreneurial infrastructure consists of entrepreneurial zones and supportive institutions. Entrepreneurial zones are areas that are equipped with infrastructure, determined by spatial plans, intended for entrepreneurial and economic activities (Ministry of Entrepreneurship and Crafts, Croatia, 2013). All the subjects in the zone share an infrastructure that results in the rationalisation of business operations. The aim of entrepreneurial zones is to enhance economic development with the planning and timely construction of infrastructure to balance development among Croatian regions, and boost entrepreneurship, investments and employment (Ministry of Entrepreneurship and Crafts, Croatia, 2013). In addition, the law provides a frame of financial support for entrepreneurial infrastructure by defining the application criteria. According to the law, founders of entrepreneurial zones can be individual legal entities or consortiums comprised of the Republic of Croatia alone or together with regional or local government or other legal

Table 1. Grouping counties and municipalities according to the development index.

Group	Government level	Explanation
I	Municipalities/counties	Development index value less than 50% of Croatian average
II	Municipalities/counties	Development index value between 50–75% of Croatian average
III	Municipalities/counties	Development index value between 75 and 100% of Croatian average
IV	Municipalities/counties	Development index value between 100 and 125% of Croatian average
V	Municipalities/counties	Development index value higher than 125% of Croatian average

Source: Authors' work according to Ministry of Regional Development and EU Funds.

entities, bodies and entities of local or regional government. Consortium can also be made of Republic of Croatia and universities, scientific institutes, and other craft associations or associations that are registered for enhancing entrepreneurial infrastructure, research, innovation and technological development on the market. universities, scientific institutes, and other craft associations or associations that are registered for enhancing entrepreneurial infrastructure, research, innovation and technological development on the market.

According to the Croatian Audit Office (2014), at the end of 2013 there were 1,308 entrepreneurial zones in Croatia, whose founders were 515 municipalities and three counties, 34.5% (451) of which were active and had 69,303 employees. Before 2004, 3,373,824,766.00 kn was invested in development and infrastructure, from 2004 to 2013, 3,050,059,461.00 kn was invested, 868,452,828.00 kn or 28.5% of which was invested by the Republic of Croatia, 1,725,598,445.00 kn or 56.6% by municipalities, 192,842,964.00 kn or 6.3% by counties, and 263,165,224.00 kn by other sources (private entities or firms in the municipalities or county's ownership and others). In the zones that are not in function 458,507,866.00 kn was invested.

Accordingly, this paper analyses who invested the most in zones in respect of the development index of counties where the zones are located: the state, the regional and local government or the private sector.

Zones in Croatia, as in England, are seen as a means of gaining economic development through creation of new ventures and jobs (Greenbaum & John, 2004; Couch, Atkinskon & Smith, 2005).

Up until now, no paper has analysed this topic in Croatia; as mentioned in Šugar and Kontošić (2014) the possible reason for this scarcity of literature, both scientific and other on the topic of the entrepreneurial infrastructure and its impact on economic growth and developmentit is a lack of data on mentioned topic. Furthermore, to the best of the authors' knowledge there are no papers worldwide addressing the same question.

3. Methodology

The development index was used to analyse how the development stage affects the type of investment in entrepreneurial zones in Croatian municipalities and counties. The Ministry of Regional Development and E.U. Funds is using this index to evaluate and select the development stage of municipalities and counties. The index of regional development groups the municipalities into five categories. The table below shows the grouping (Table 1).

Considering that the development index is a composite indicator, the calculation is based of pondered average of more basic socioeconomic indicators for calculating the

Table 2. Grouping the Croatian counties by development index.

Counties	Group <50%	Group <75%	Group 75–100%	Group >125%
Bjelovarsko-bilogorska	X	X		
Brodsko-posavska	X	X		
Istarska				X
Karlovačka		X		
Koprivničko-križevačka		X		
Ličko-senjska		X		
Osječko-baranjska	X	X		
Požeško-slavonska	X	X		
Primorsko-goranska				X
Sisačko-moslavačka	X	X		
Virovitičko-podravska	X	X		
Vukovarsko-srijemska	X	X		
Šibensko-kninska			X	

Source: Authors' work according to Croatian Audit Office Report (2014).

range of development of municipalities and counties. Following the deviation of indicator values of the national average, it is possible to group them as shown in the table above. Unemployment rate, per capita income, per capita budget revenues of municipalities and counties, and general populations' movements are used for the index calculation.

In accordance with the Law of Regional Development ('Narodne novine' No 147/14), the index is calculated every five years and allows implementation of the present regional policy. The last one is from 2013. For the purpose of this research the mean of the development indexes of 2 years, 2010 and 2013 is calculated for every municipality.

On the other side, audit data from the Croatian audit office published in 2014 regarding entrepreneurial zones, their activities, number of employees, business subjects, landowners analysis and the amount of investments grouped in the state, regional, local and other investments (private sources or investments from counties or municipality firms, etc.) were used to complete the research. One of the aims of the audit was to evaluate the validity of investment in developing business zones. The evaluated period and the used values of investment in zones are cumulative from 2004 up to 2013. Only municipalities and counties with active entrepreneurial zones are used in this research. 2004 is the first year because it marks the year of writing the government Programmme for Development of Entrepreneurial Zones 2004–2007, followed by the Programme for Boosting Small and Medium Entrepreneurship 2008–2012/2013. These programmes were implemented by competent ministries. According to the aforementioned law the aim of entrepreneurial zones is to balance regional development in Croatia. Although all zones in Croatia followed a different path in their formation, most of them were boosted by public investment, while a minority were established by bottom-up principle by the private sector. So, if the zones and – more properly – small and medium enterprises are a good tool for the realisation of economic development, is it possible to link the development index with the amount and type of the investment? Is there a difference between/within developed and developing local and regional government units by the type and height of investment? In the table below it is possible to see county grouping by development index (Table 2).

Table 3. The impact of development index on different types of investment in counties with the development index lower than 50%.

	Municipality	County	Rep. of Croatia	Other sources
Development index	0.237*	0.0171*	0.192**	0.103
	(2.39)	(2.12)	(3.26)	(1.32)
Constant	−12.75*	−1.530*	−10.49**	−13.57*
	(−2.18)	(−2.61)	(−2.89)	(−2.33)
Sigma				
Constant	6.356***	0.724***	6.275***	9.536**
	(3.62)	(5.28)	(4.32)	(3.14)
Observations	91	91	91	91

t statistics in parentheses.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Source: Research results.

In Croatia only two counties had a development index higher than 125% in 2013; they are: Istarska, Primorsko-goranska and the Croatian capital city, the city of Zagreb (which was excluded from the research because there is no entrepreneurial zone). Counties with a development index lower than 50% are: Virovitičko-podravska, Brodsko-posavska, Vukovarsko-srijemska, Bjelovarsko-bilogorska, Požeško-slavonska, Sisačko-moslavačka and Osječko-baranjska. Furthermore, the authors took into consideration the municipalities in the mentioned counties.

Since the data for investments are a mixture of observations with zero and positive values, the Ordinary Least Squares (O.L.S.) regression model will not yield consistent parameter estimates because the censored samples are not representative of the population. For this reason, to analyse the impact of development index on different types of investments the Tobit regression model was used, originally developed by James Tobin (Tobin, 1958) – also called a censored regression model – designed to estimate linear relationships between variables when there is left – or right – censoring in the dependent variable. Since the Tobit Maximum Likelihood Estimator (M.L.E.) is inconsistent if the errors are not normally distributed or in the presence of their heteroscedasticity, the robust errors of Variance-Covariance matrix of the Estimator (V.C.E.) are used.

The One-Way Analysis of Variance (ANOVA) – a statistical technique that assesses potential differences in the means between two or more groups – was used to analyse the difference between counties. To assess pairs of means difference (county by county) the Bonferroni post hoc method was applied.

4. Results

The next paragraph presents the results which clearly show whether counties, municipalities and the state are really investing in entrepreneurial zones to boost development in developing municipalities/counties, or if not the case, are they investing more in developed counties and municipalities?

According to the research results, developed municipalities in developing counties invested much more in entrepreneurial zones because they had more money, but also the counties and the state invested more in them than in others. That is not the case for other sources. The results shown in Table 3 were obtained using Tobit regression

Table 4. Impact of development index on different types of investment in counties with the development index lower than 75%.

	Municipality	County	Rep. of Croatia	Other sources
Development index	0.259***	0.0382*	0.136***	0.0419
	(3.56)	(2.25)	(4.73)	(0.86)
Constant	−14.92**	−3.680*	−7.541***	−9.183*
	(−3.27)	(−2.41)	(−3.99)	(−2.52)
Sigma				
Constant	6.636***	2.794*	5.523***	8.148***
	(5.16)	(2.35)	(5.25)	(3.79)

t statistics in parentheses.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Source: Research results.

model with robust errors of V.C.E. The development index is expressed as a percentage, the investments in millions of kuna.

Based on Table 3 it can be seen that, at 5% significance level, in the poorer counties (development index lower than 50%), municipalities that are more developed, compared to the less developed, get more investments from the municipality, the county and the Republic of Croatia. The same conclusion is not valid for other (mostly private) sources. Based on the Tobit regression coefficients, it is possible to say that an increase of 1% in developed index of municipalities, leads to an increase of investments in counties that have a development index less than 50%, accumulated for the entire period from 2004 to 2013, of 237,000 kuna from the municipality, 17,100 kuna from the county and 192,000 kuna from Republic of Croatia.

If we expand analysed counties to those with a development index lower than 75%, a similar result can be found (Table 4), that the municipalities which are more developed have higher investments from the municipality, the county and the state, or a 1% increase of development index led to a statistically significant increase of 259,000 kuna from the municipality, 38,200 from the county and 136,000 from the Republic of Croatia, in the period 2004–2013.

Different results are seen in counties that have development index higher than 125% (Table 5) because there is no link between the development index and investments from the county, the state or private sources. There is only an impact of development index on investments from municipality. In other words, richer municipalities invest more than poorer municipalities in the group of counties with a development index greater than 125%, for 192,000 kuna, for the period from 2004 to 2013, for an increase of 1% in development index.

Figure 1 depicts the average investments of the municipality, county, state and other sources across different groups of counties, grouped by their development indexes.

To compare the differences of investments between poorer and richer counties the ANOVA analysis was used.

From Table 6 it is possible to see that between counties with a different development index there is no difference in investments of municipalities (local investments), state and other sources in entrepreneurial zones. But with regard to county (regional) investments in municipalities it is possible to see that there is a statistically significant difference in means of investments, as could be seen also in Figure 1. Based on the Bonferroni group by group post hoc analysis (Table 7) it can be seen that the

Table 5. Impact of development index on different types of investment in counties with development index higher than 125%.

	Municipality	County	Rep. of Croatia	Other sources
Development index	0.192*	0.00474	0.0237	−0.00894
	(2.11)	(0.42)	(0.96)	(−0.31)
Constant	−19.42	−0.708	−2.864	−1.618
	(−1.94)	(−0.54)	(−0.97)	(−0.49)
Sigma				
Constant	13.19*	1.369***	3.332***	3.002**
	(2.62)	(5.72)	(6.37)	(2.92)

t statistics in parentheses.
$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.
Source: Research results.

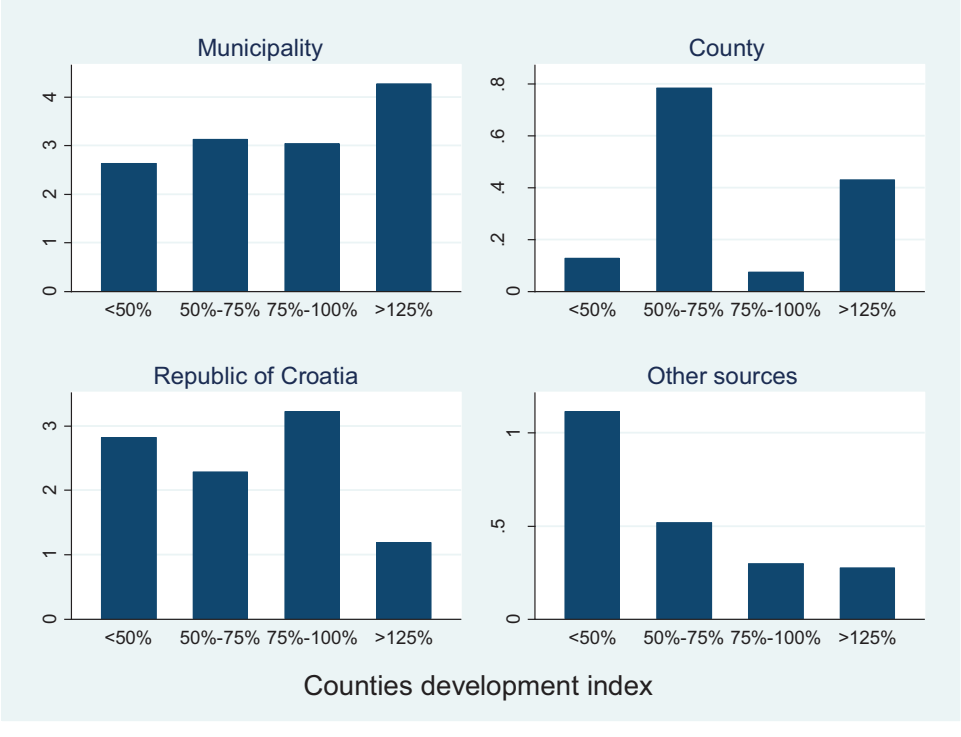

Figure 1. Means of investments of municipalities (local government units), counties, state, and other sources (usually private) in counties with different development index. *Source:* Authors' work.

Table 6. Means of investments (in millions) of municipalities, counties (regional government units), state, and other sources (usually private) in counties with different development index with *F* statistics and significance level in parenthesis.

		Municipality		County		Rep. of Croatia		Other sources	
County	N	Mean	*F* (*p*)	Mean	*F* (*p*)	Mean	*F* (*p*)	Mean	*F* (*p*)
<50%	91	2.626	0.462 (0.712)	**0.128**	**2.971 (0.033)**	2.818	2.114 (0.099)	1.114	1.534 (0.208)
50%–75%	75	3.127		0.784		2.286		0.517	
75%–100%	8	3.044		0.075		3.223		0.299	
>125%	70	4.273		0.430		1.187		0.275	

Bold: Significant at the 5% level.
Source: Research results.

Table 7. Comparison of county by county means of investments by Bonferroni post hoc analysis; difference in mean of investments (in millions) and *p* values.

Country	<50 %	50–75%	75–100%
50–75%	**0.655955; 0.024**		
75–100%	−0.052839; 1.000	−0.708793; 1.000	
>125%	0.302636; 1.000	−0.353319; 0.858	0.355474; 1.000

Bold: Significant at the 5% level.
Source: Research results.

Table 8. Impact of development index on different types of investment controlling for the different development of counties.

	Municipality	County	Rep. of Croatia	Other sources
Development index	0.231***	0.0179	0.112***	0.0234
	(4.09)	(1.83)	(4.55)	(0.68)
<50%	0	0	0	0
	(.)	(.)	(.)	(.)
50–75%	−1.659	1.763*	−1.558	−1.750
	(−1.41)	(2.17)	(−1.62)	(−1.11)
75–100%	−2.915	−0.563	−2.053	−1.758
	(−1.16)	(−0.61)	(−0.86)	(−0.59)
>125%	−10.91**	0.229	−8.903***	−3.469
	(−3.25)	(0.36)	(−4.31)	(−1.41)
Constant	−12.50***	−2.956**	−5.153***	−5.976*
	(−3.72)	(−2.66)	(−3.67)	(−2.50)
Sigma				
Constant	8.892***	2.345**	5.195***	6.899***
	(4.21)	(2.66)	(6.13)	(4.12)
Observations	244	244	244	244

t statistics in parentheses.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Source: Research results.

difference in means of investments found in investments of counties in municipalities is primarily generated by a statistically significant difference between the group <50% and group 50–75% (p=0.024 < 0.05).

Table 8 presents the results regarding the impact of development index and different groups of development of counties, as control variables, on different types of investments based on Tobit regression models with robust errors of V.C.E. The county group <50% variable was dropped to avoid the dummy-variable trap. The results confirm what was found in Tables 3, 4 and 5; that an increase of development index of municipality will increase investments from municipality and state. Based on the results shown in Table 8 it is possible to conclude, with 95% confidence, that an increase of 1% of development index of municipality will, on average, increase by 231,000 kuna of investments from municipality and 112,000 kuna from the state in the period 2004–2013. Further, municipalities in more developed counties (>125%) in the whole period (2004–2013) received on average 11 millions of kuna less in investments from municipality, and 9 million less from the state, than they should have got based on their development index (Table 9).

Corroborating the results obtained earlier, the estimated regressions show there is a positive relationship between development index of municipality with municipality and state investments, and the same applies when counties were included in the models. Therefore it can be concluded that we have robust results. It can be concluded that entrepreneurial zones in most developed counties (usually Istarska and

Table 9. Impact of development index on different types of investment controlling for different counties.

	Municipality	County	Rep. of Croatia	Other sources
Development index	0.226***	0.0265*	0.117***	0.0235
	(4.23)	(2.52)	(4.36)	(0.70)
Bjelovarsko-bilogorska	0	0	0	0
	—	—	—	—
Brodsko-posavska	−0.404	1.900	0.482	0.408
	(−0.24)	(1.75)	(0.26)	(0.14)
Istarska	−13.35***	0.751	−10.16***	1.522
	(−3.81)	(0.72)	(−4.69)	(0.50)
Karlovačka	−4.385	3.066	−3.103	−0.0516
	(−1.81)	(1.57)	(−1.88)	(−0.02)
Koprivničko-križevačka	−0.448	2.133	−3.473*	1.143
	(−0.14)	(1.86)	(−2.13)	(0.31)
Ličko-senjska	−3.258	−12.59	−0.668	−0.206
	(−1.62)	(.)	(−0.35)	(−0.05)
Osječko-baranjska	−2.099	3.363**	−1.665	3.888
	(−1.26)	(2.64)	(−1.40)	(1.44)
Požeško-slavonska	−0.318	0.819	−0.476	8.522*
	(−0.12)	(0.66)	(−0.23)	(2.25)
Primorsko-goranjska	−9.444*	0.860	−9.432***	−1.876
	(−2.31)	(0.79)	(−4.57)	(−0.54)
Sisačko-moslovačka	−0.938	1.574	−2.886*	3.084
	(−0.31)	(1.51)	(−2.00)	(1.13)
Virovitičko-podravska	−0.592	0.355	0.0808	6.683
	(−0.32)	(0.31)	(0.04)	(1.29)
Vukovarsko-srijemska	−2.541	0.149	−0.909	4.682
	(−1.50)	(0.14)	(−0.40)	(1.51)
Šibensko-kninska	−3.750	0.315	−2.807	1.981
	(−1.36)	(0.26)	(−1.15)	(0.57)
Constant	−11.26**	−4.485**	−4.787*	−9.308*
	(−3.23)	(−2.64)	(−2.31)	(−2.52)
Sigma				
Constant	8.820***	2.277**	5.139***	6.452***
	(4.31)	(2.66)	(6.13)	(4.43)
Observations	244	244	244	244

t statistics in parentheses.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Source: Research results.

Primorsko-goranska) had much smaller average amounts of investment from municipalities and the state. Furthermore, in relation to less developed municipalities, the more developed in the same county had investments from municipalities and the state in their entrepreneurial zones, while regional and other investments are not in correlation with the development index.

The same analytics were also made for the municipalities. In the group of municipalities with an index lower than 50%, there is no difference between poorer and richer. In the group lower than 75% the richer received more money for their entrepreneurial zones from all investment sources. In the group higher than 125% the main difference is the result of other sources of investments, so that more developed municipalities received more money from private investors.

5. Discussion and conclusion

Entrepreneurs play an important role in the economic development of a region, therefore regional policy uses investments in entrepreneurial infrastructure as one of

the measures. In the case of Croatia the authors looked on entrepreneurial zones as a part of entrepreneurial infrastructure that is defined by the Croatian legal frame.

If the legal frame on a national level, and strategies and programmes on regional and local levels, mention entrepreneurial zones as a way of developing entrepreneurship, of creating new jobs and making the economy more competitive, then the mentioned bodies should invest in the zones in developing counties and municipalities with a smaller index more than in those with a higher development index. But, do they?

Observing the means of municipality, county, state and other in counties with a different development index, there is no difference in investments in entrepreneurial zones by municipality, state and other sources. The only significant difference is in counties' investments in zones of the counties with different indexes. Counties mostly invest in entrepreneurial zones with a development index between 50–75%, followed by those with a development index higher than 125%.

How is investing divided between municipalities in different development index county groups? Using Tobit regression the authors found out that in the group of counties with a development index lower than 50%, more developed local government units invested more in their entrepreneurial zones, but they also received more money from the state and the county; for the larger group of counties – including those with a development index higher than 75% – the situation is similar. In the most developed counties with an index higher than 125% there is no link between the development index and investments of the county, the state and other sources. But it is possible to see that richer municipalities invest more than poorer municipalities in this counties group, since an increase in municipality development index will expand investments from municipalities.

At this point, it is possible to conclude that no matter the regional policy assumptions and the national, regional or local recommendations, regarding grouping counties and municipalities in them, there are differences between and within. Moreover, in conclusion only results for the counties were taken because analyses at the local level showed small differences and reject some data.

Tobit regression was used for the combined impact of the development index and investments by the county, and the results show that more developed counties received on average less money from municipalities and the state for entrepreneurial zones than they are entitled to regarding the development index. In the same county, more developed municipalities invested more money in entrepreneurial zones and received more money from the state, while investments from the county and other sources are not correlated with the development index.

The Croatian government has changed the policy regarding entrepreneurial zones a few times during the last decade. The government Programme for Entrepreneurial Zones from 2004–2007 stated that every county should have an average number of 20 zones which counties had to elaborate through regional planning to gain financing from the correspondent ministry. So financing was possible from multiple sources: the ministries of Economy, Labour and Entrepreneurship, and the Sea, Tourism, Transport and Development, local and regional government units, and the Croatian Bank for Reconstruction and Development, etc. But the national government has set

a condition that the state will invest in zones regarding municipalities and regional investments (Croatian government, 2004). More developed counties such as the Istrian County could invest more in zones, so more money was given to them at the state level. The same situation applies to municipalities.

The following state programme, which ensured finance to entrepreneurial zones, was the Programme of Enhancing Small and Medium Entrepreneurship 2008–2012, through which it was possible to have state support for building entrepreneurial zones. Also, the targeted group were the entrepreneurs who were entering the entrepreneurial zone.

Who is mostly at fault for this uneven distribution: the state, the county or the municipality? As previously seen, there is no rule for how to invest in entrepreneurial zones. In some cases a small development index can really attract investments, but also the other way around can happen.

The limitation of this paper is not only the scarcity of literature in Croatia regarding entrepreneurial zones and their impact, but also the deficiency of data. This paper is the first to deal with the question of investment distribution in Croatian entrepreneurial zones and wider. As far as the authors are aware, the paper is the pioneer regarding the theme and research in countries where entrepreneurial zones have been established. So, another limitation can be seen in an inability to compare the research with other studies and scientific papers which have the purpose to analyse different sources of investment in entrepreneurial zones in counties/municipalities on different development levels.

Moreover, further research should be undertaken by a single Croatian county to analyse the specific environment that has led to this distribution which could be the base for conducting a research on EU states with entrepreneurial zones.

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No potential conflict of interest was reported by the authors.

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