



## Business incubators in Croatia: Resources and results

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### Abstract

The main objective of this study is to examine the resources that business incubators in Croatia have at their disposal and to analyze the business dynamics and financial performance of their tenant enterprises. Unlike the previous studies that mainly employed a survey of business incubators, this study, in addition to a survey of 24 business incubators in Croatia, also uses firm-level data of tenant enterprises. Findings indicate small management teams of business incubators and high demand for tenant enterprises for mentoring services. Policymakers should consider these empirical findings and support investments in knowledge, skills, and mentoring capabilities of business incubators' management teams. The main limitation of the research is that it did not include data from tenant enterprises on the perceived quality of services provided by business incubators. However, the financial analysis of tenant enterprises is the first of that kind and will enable a more straightforward evaluation of business incubators' success and, thus, better control over public spending.

**Keywords:** business incubators; entrepreneurial infrastructure; incubators; new technologies; tenant enterprises

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## **1. Introduction**

Business incubators (BIs) are a part of entrepreneurial infrastructure that aims to support novice entrepreneurs. They provide potential entrepreneurs with an environment in which they have the necessary predispositions for entering an entrepreneurial venture, further business development, and, ultimately, survival on the market. The literature review on BIs in Croatia showed a lack of research on the performance of their tenant enterprises. This study aims to learn more about the operation of BIs in Croatia focusing on the tenant-level data including their business dynamics and financial results.

The results of this research can be useful to decision-makers in the public sector when creating policies to strengthen entrepreneurship. Given that the results provide an overview of the resources available to BIs and the business dynamics of tenant enterprises, this research is also helpful for incubator managers for easier benchmarking and interested potential users of BIs' services.

The literature review presented in the second part of the paper clarifies the role of entrepreneurial infrastructure in fostering entrepreneurship emphasizing BIs as support for establishing and developing enterprises. Research questions are posed based on the gaps in the existing scientific literature devoted to the operations of BIs in Croatia. The methodology used is presented in the third part of the paper, while the fourth part presents the research results. The fifth part of the paper discusses the results, gives the conclusion, and highlights new research questions that arose from the obtained results.

### **1.1. Literature review**

#### *1.1.1. Purpose and structure of entrepreneurial infrastructure*

The importance and role of small businesses for the entire economy were recognized as the result of changes in the global economic environment in the 1980s, resulting in a decrease in the average size of businesses (Thurik, 2008). After realizing the importance of entrepreneurship in the development of national economies, countries worldwide have begun to create and implement policies and programs that encourage entrepreneurship (Loorbach, 2022). The European Union helps small and medium-sized enterprises realize ideas, internationalize, use financial resources, develop technologies, and grow companies through several programs and various support organizations (European Union, 2018). The Entrepreneurship 2020 Action Plan (European Economic and Social Committee, 2013) sought to collaborate at the European, national, regional, and local levels in three main areas: entrepreneurship education, mentoring of certain groups of entrepreneurs, and improvement of the business environment so that enterprises could grow.

The business environment and entrepreneurial activities are influenced by the economic, institutional, political, and socio-cultural framework of the entire country. It is essential to ensure the potential entrepreneurs the availability of all necessary information about the market, regulations, laws, physical infrastructure, communication network, and financial resources (Grgić, Bilas & Franc, 2010).

To achieve economic growth and balanced regional development in Croatia, state and local governments invest in entrepreneurial infrastructure (Buble & Kružić, 2006). According to the Improvement of Business Infrastructure Act, entrepreneurial infrastructure represents all spatially specific forms of various entrepreneurial activities that result from a well-organized spatial development of the Republic of Croatia. In the narrow sense, entrepreneurial infrastructure is the system of entrepreneurial zones and entrepreneurship support institutions of the Republic of Croatia (Improvement of Business Infrastructure Act, NN 93/13 (NN 138/21)).

The main characteristic of entrepreneurial zones is the joint use of infrastructure-equipped space by entrepreneurs who operate within the entrepreneurial zone, which enables rationalization of operations

and greater efficiency (Improvement of Business Infrastructure Act, NN 93/13 (NN 138/21). The goal of establishing and building an entrepreneurial zone is to increase the number of economic entities, improve their business results, and increase employment and production in the entire economy.

Entrepreneurship support institutions represent entities aimed at creating a high-quality, user-oriented entrepreneurial environment in the Republic of Croatia, and include development agencies, entrepreneurial centers, business incubators, entrepreneurial accelerators, business parks, science and technology parks and competence centers (Improvement of Business Infrastructure Act NN 93/13 (NN 138/21). Development agencies are responsible for the operational implementation of measures for the development of the economy and entrepreneurship at the local, regional, and national levels, attracting investors and implementing projects to encourage economic development and entrepreneurship (Improvement of Business Infrastructure Act NN 93/13 (NN 138/21).

Entrepreneurial centers represent centers of professional and advisory assistance to entrepreneurs. Some of the basic tasks of entrepreneurial centers are business consulting, coordination of entrepreneurial activities, organization of supplementary education for entrepreneurs, promotion of entrepreneurship, referring entrepreneurs to specialized forms of assistance, and helping in preparing business plans for independent entry into the world of entrepreneurship (Buble & Kružić, 2006).

Business incubators include incubators for entrepreneurship and incubators for new technologies (Page & Holmström, 2023; Yang et al., 2024). Incubators for entrepreneurship provide support in the form of business services and the provision of necessary resources for entrepreneurs, which ultimately results in the successful development of entrepreneurship. Incubators for new technologies are specialized business entities focusing on new technologies that support innovative entrepreneurship and its growth (Page & Holmström, 2023; Audretsch et al., 2023; Improvement of Business Infrastructure Act NN 93/13 (NN 138/21).

Business parks offer resources to enterprises on a commercial basis with a special focus on attracting investments (Improvement of Business Infrastructure Act NN 93/13 (NN 138/21). Science and technology parks strive to encourage cooperation between scientists and businessmen and provide legal assistance and advice in the field of industrial property rights protection (Buble & Kružić, 2006).

Competence centers are business entities that develop competencies in certain areas, carry out research projects of a developmental or production nature, and can contract research services with other business entities to develop and strengthen certain industrial branches. Furthermore, they focus on strengthening intellectual property within specific thematic areas (Improvement of Business Infrastructure Act NN 93/13 (NN 138/21).

#### *1.1.2. Business incubators as support for the establishment and development of enterprises*

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The oldest documented BI is the Batavia Industrial Center in New York, started in 1959 on an old farm that was closed due to technological advances (Škrtić & Mikić, 2011). Real estate and retail entrepreneurs bought a building on the farm and divided it into smaller lots to help small businesses set up and grow. The sharing of resources and the exchange of experiences encouraged companies to many new entrepreneurial ventures, which gave rise to the concept of the BI as a tool for economic development. In

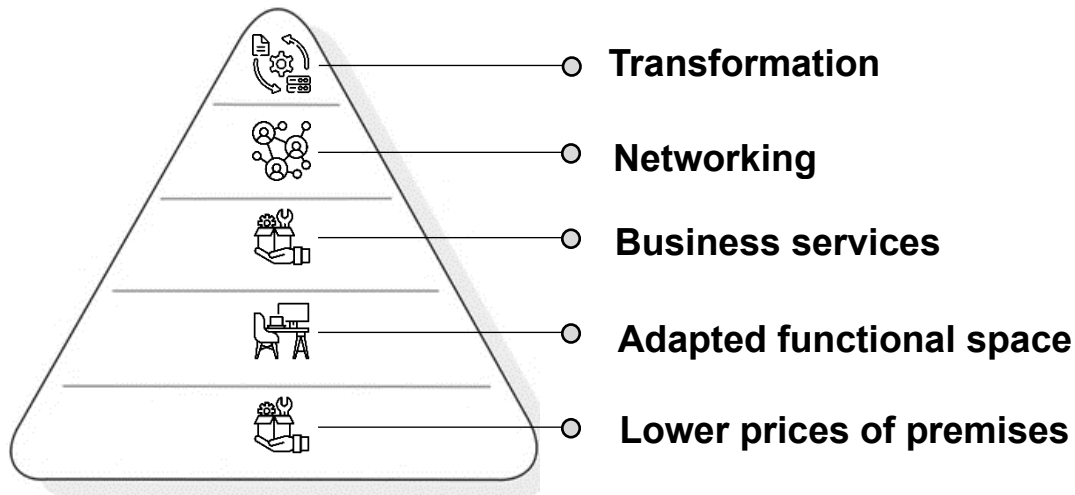
the 1960s, the idea of BIs spread in the USA, and the public sector started to launch programs to help new enterprises in their establishment, growth, and development (Škrtić & Mikić, 2011). The basic premise of BIs remained unchanged over time, but business characteristics have evolved over the years in response to contextual forces (Shepard, 2013).

The problem that BIs try to reduce is the low survival rate of new enterprises on the market. Obstacles faced by small businesses are reflected in the lack of management knowledge, poor information availability, limited financial resources, high operating costs, and administrative barriers (Grgić et al., 2010). BIs provide new enterprises with an environment in which they have the necessary predispositions to start doing business and survive in the market.

The services offered by the incubator to its tenants vary in complexity and can be structured as a pyramid as shown in Figure 1. BIs' basic services include leasing office space, production, and storage premises at prices lower than the usual commercial market prices (Lesakova, 2012). Adapted functional space contains everything adapted to the needs of the individual entrepreneur. Also, the incubator can offer all business services such as advisory, marketing and financial services, business planning services, etc. In the incubation process, the exchange of experience and the possibility of networking is critical, which is also one of the levels of services offered by incubators (Yuan et al., 2022). Exchanging experiences with entrepreneurs in the same or similar situation enables finding solutions to specific problems faster and needing less time to present a new enterprise on the market (Tupek & Ćorić, 2018). Furthermore, at the top of the pyramid is transformation, which involves developing overall skills for building successful companies, and contributing to innovative solutions and business models based on them (Salamon & Knapić Salamon, 2017).

**Figure 1**

*Pyramidal levels of BI's services*



*Source:* Authors' work based on prior research (Salamon & Knapić Salamon, 2017; Pine II & Gilmore, 2011)

Dimensions of BI performance are entry and exit criteria, managerial skills, provision of services, policy and structure, social capital, and resources (Pattanasak et al., 2022). The main goals of BIs in Croatia are to stimulate economic development, create successful companies, and encourage job creation (Morić

Milovanović & Tutić, 2021). Most BIs in Croatia are oriented towards increasing the number of tenant enterprises and providing added value for the entire economy (Pfeifer et al., 2006). However, in the literature, there is no detailed information on the spatial resources of BIs in Croatia. Also, the size of the teams that implement the operations of the BIs is unknown. Therefore, the following research question is posed to determine what resources BIs have at their disposal when achieving their goals:

RQ1: What spatial and human resources do BIs in Croatia have at their disposal?

The most encompassing recent research on Croatian BIs was made by Morić Milovanović & Tutić (2021). Their study showed that the degree of self-sufficiency of the incubators is not high enough, which means that there is a need for substantial co-financing of the incubators from the founders and the state. The most important sponsors of incubators are the state and the European Union (67.6%) and public entities (55.9%). At the same time, the role of banks, venture capital funds, universities, and private companies is not particularly prominent in financing the incubators (Morić Milovanović & Tutić, 2021). One way it is possible to increase the self-sufficiency of the incubators is the income from the tenant enterprises, including income from renting space and income from charging for services. Morić Milovanović & Tutić (2021) therefore, suggested that future research should investigate whether BIs generate revenue from their tenant enterprises and, if so, in what percentage. Thus, the following research question is posed:

RQ2: What share of revenue do BIs generate from their tenant enterprises?

The main goal of BIs is to use a range of resources and services to produce successful companies that are independent after incubation, which ultimately leads to economic growth and development (Tupek & Ćorić, 2018). In market terms, a BI is a producer of business assistance programs, while tenant enterprises are consumers of those outputs (Rice, 2002). Morić Milovanović & Tutić (2021) identified five basic categories of services that BIs in Croatia offer to their tenants: infrastructure services, financial services, networking services, legal and human resource management services, and business consulting services (Morić Milovanović & Tutić, 2021). Infrastructure services and networking services are offered most often, while financial services are the least present. Less than half of incubators provide access to venture capital funds (41.2%), and only 38.2% provide access to business angel capital (Morić Milovanović & Tutić, 2021). It is known from the literature which services BIs in Croatia most often offer, but less is known about the services that tenant enterprises most need. This is examined by asking the following research question:

RQ3: What services do tenant enterprises most often request from BIs?

One of the fundamental limitations of the otherwise very detailed research on BIs in Croatia is the subjective assessment of the respondents, especially in the analysis of the success of the incubators (Morić Milovanović & Tutić, 2021). The literature suggests evaluating BI performance through their characteristics, the number and quality of provided services, and the number of incubated and graduated firms (Al-Mubarak & Busler, 2012).

Incubation is a dynamic and organized process of growth and development of a start-up company from entering the incubator to exiting it. The goal of the incubation process is to bring the company to the stage of stable operations, which enables further growth and development outside the incubator (Center for Entrepreneurship of Dubrovnik-Neretva County, 2020). BIs cooperate with entrepreneurs even before opening their own company by providing them with business advice to realize their ideas as successfully as possible, which is called pre-incubation (Nikolić & Zorić, 2014). Post-incubation represents a process in which entrepreneurs who have developed in the incubator continue business cooperation with the incubator outside of it, whereby companies can use the incubator's services, to develop new projects. In Croatia, 82.4% of incubators provide pre-incubation services, while 70.6% provide post-incubation services (Morić Milovanović & Tutić, 2021).

Data from 2006 showed that incubation in Croatian incubators lasts from 3 years (for service companies) to 5 years (for manufacturing companies) (Pfeifer et al., 2006). Since recent data on the business dynamics of tenant enterprises in BIs in Croatia is not known, the following research question is posed:

RQ4: What are the characteristics of the business dynamics of tenant enterprises in BIs in Croatia?

After the emergence of the new public administration as a management model in the public sector, research efforts are strongly aimed at improving the process of planning, execution, and monitoring of budget expenditures to increase rationality in spending public funds while simultaneously providing public services of the highest possible quality (Alibegović & Blažević, 2010). From a policy perspective, it is important to analyze the tenant profile as this highlights the extent to which BIs require public funding (Bruneel et al., 2012). Some studies dealt with the financial indicators of tenant enterprises in different European countries (Dvouletý et al., 2018; Lukeš, et al., 2019), and the literature suggests that future research on BIs in Croatia should use secondary quantitative indicators (Morić Milovanović & Tutić, 2021). Since the main goal of BIs is to promote new business formation and accelerate new business growth (Cheng & Schaeffer 2011), it is surprising how little is known about the tenants in Croatian incubators, their size and profitability, and the sectors in which they operate. To reduce this gap, the following research question is posed:

RQ5: In which sectors do tenant enterprises of BIs in Croatia operate, and what are their size and profitability?

## **2. Methods and materials**

### **2.1. Data collection instrument**

To answer the posed questions, the empirical research was conducted in two parts. The first part is a survey of BIs' managers, and the second part is an analysis of the financial indicators of the tenant enterprises.

### **2.2. Participants**

According to the Unified Register of Entrepreneurial Infrastructure (Ministry of Economy and Sustainable Development, 2020), there were 52 BIs registered in Croatia. Furthermore, of the total number of BIs, 40 are incubators for entrepreneurship, while 12 are incubators for new technologies.

### **2.3. Procedure**

An initial phone call was made to each incubator to participate in the survey. Of the listed 52 BIs, two incubators were registered both as incubators for entrepreneurship and incubators for new technologies. By contacting the mentioned incubators, the answer was obtained that they consider themselves as incubators for entrepreneurship and that they operate as one entity. Further research yielded information that three incubators are in the process of liquidation. In comparison, five incubators sent feedback with the reason why they could not participate in the research, for example, that they still do not have a building and tenants, that they have not yet started doing business, or are no longer operating as an incubator. By considering the collected information from a total of 52 incubators from the initial list and deducting duplicate registrations, incubators in liquidation, and incubators that stated the reason why they could not participate in the research, the number of 42 potential responses to the survey was reached. After the initial telephone contact, a questionnaire was sent to the BIs via e-mail.

The survey consisted of a total of 21 questions, and it was necessary to set aside 10 minutes and enter the required answers. The questions in the survey refer to the number of tenants in the incubators, the share of revenues received from the tenants, the services that the tenants ask for the most, the number

of new enterprises in the incubators, and the number of successfully and unsuccessfully exited enterprises. The conducted survey was voluntary and anonymous. Out of the 42 potential responses, 24 BIs participated in the survey making a successful response rate of 57.14%.

#### **2.4. Analysis**

The analysis of the financial indicators of tenant enterprises began by collecting a list of tenant enterprises from the BIs that participated in the survey. From a total of 24 BIs that participated, a list of tenant enterprises was obtained from 18 BIs. Based on the received information, a list of 292 tenant enterprises was created doing business in 18 BIs. Their financial data was collected from the Register of Annual Financial Statements maintained by the Financial Agency. Data on the company's activity, total assets, total income, and profit/loss was collected from the financial statements, and the profit margin was calculated based on them. Furthermore, the enterprises that did not submit financial statements or were in the process of bankruptcy were eliminated from the list resulting in 196 tenant enterprises that represent the sample for statistical calculations. Out of a total of 196 enterprises, 131 enterprises belong to incubators for entrepreneurship, and 65 enterprises belong to incubators for new technologies.

The data relating to the activities of the tenant enterprises were collected according to the National Classification of Activities 2007 (Croatian Bureau of Statistics, 2020). The median values of the variable's *total assets*, *total revenues*, *profit/loss*, and *profit margin*, were calculated, considering that these variables were not normally distributed. The median values were calculated separately for the tenant enterprises of incubators for entrepreneurship and the tenant enterprises of incubators for new technologies to enable comparison.

#### **2.5. Ethics**

To reduce any possible risk of injury or discomfort to volunteers, the researchers implemented all necessary safety measures. The study's design and execution placed a high priority on ethical issues, with special emphasis on minimizing any negative consequences on the welfare of the participants.

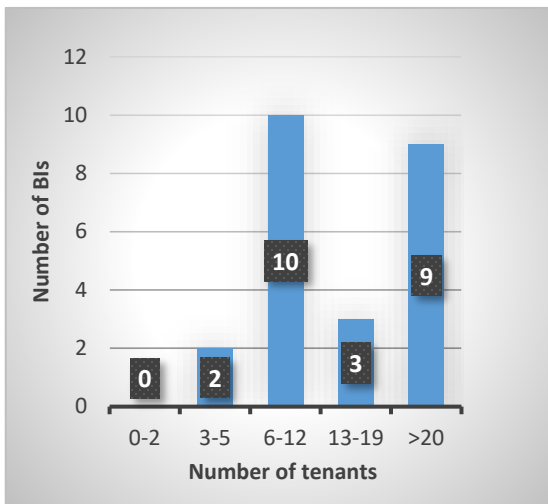
### **3. Results**

#### **3.1. Resources of BIs in Croatia**

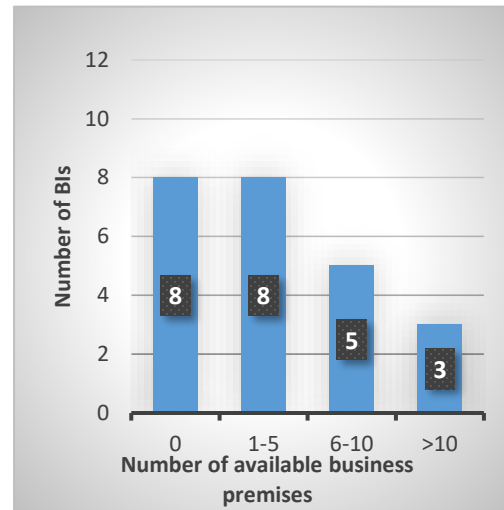
Of the 24 BIs that participated in the research, 42% (n=10) have from 6 to 12 tenant enterprises, while 38% (n=9) have more than 20 tenant enterprises. The number of tenant enterprises in BIs is shown in Figure 2a. Figure 2b shows how much spatial resources the BIs that participated in the research have for taking new tenant enterprises. 33% of the respondents (n=8) claim that there are no spatial resources for accepting new tenant enterprises and that they have a waiting list. The exact number of respondents claim that there are one to five business premises available. 21% of respondents have 6 to 10 business premises available, while 13% (n=3) of respondents claim that there are more than 10 business premises available in the incubator for accepting new tenants. BIs without available business premises are found in almost all regions of Croatia, as well as BIs with a certain number of available business premises.

**Figure 2**

(2a) Number of BIs according to the number of tenant enterprises



(2b) Number of BIs according to the number of available business premises

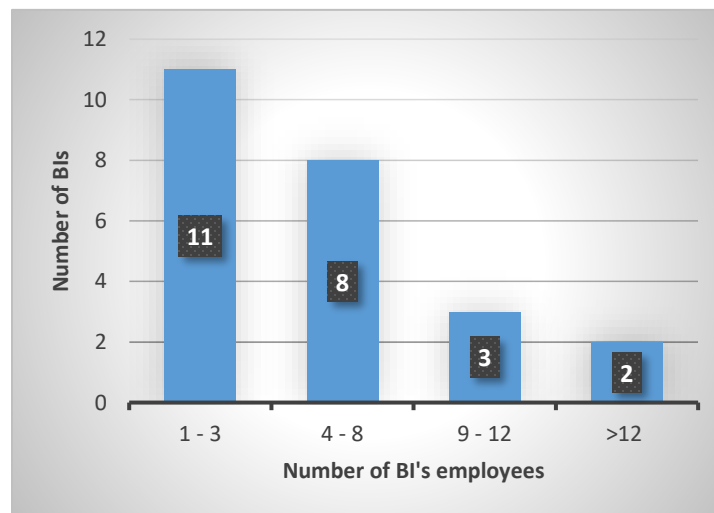


Source: Authors

Figure 3 shows the number of employees in the BI itself. Respondents were offered four ranks with the number of employees, and it was necessary to mark only one answer. 46% of respondents (n=11) claim that one to three people are employed in the BI organization. 33% of respondents (n=8) claim that four to eight people are employed in the BI organization. According to the obtained data, we can conclude that the organization of the incubator itself does not employ many people. Three BIs employ nine to 12 people, while only two BIs have more than 12 employees.

**Figure 3**

Number of BIs according to the number of BI's employees



Source: Authors

### 3.2. Share of revenue that BIs receive from their tenant enterprises

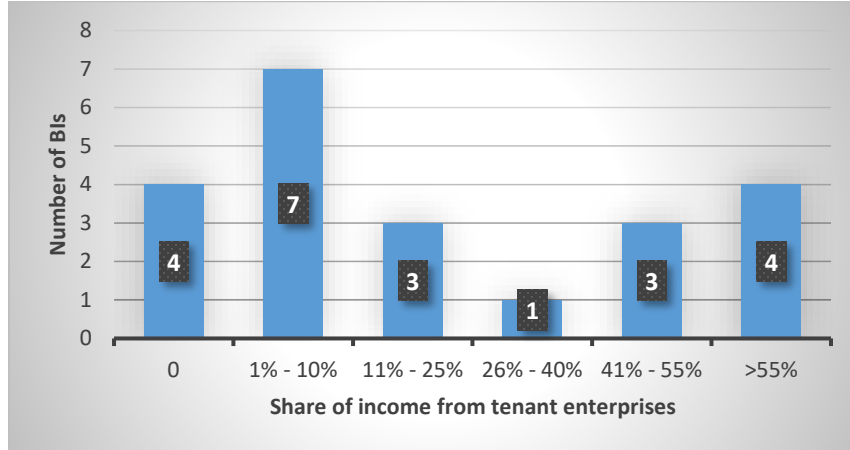
Figure 4 shows the heterogeneity in how much of their income BIs derive from tenant enterprises. Out of a total of 24 respondents, two respondents did not answer this question. 32% of the respondents (n=7)



claim that their BIs generate only 1% to 10% of their income from tenant enterprises. 18% of the respondents (n=4) derive more than 55% of their income from tenant enterprises. The same percentage of respondents claim that their BIs do not generate revenue from tenant enterprises (n=4).

**Figure 4**

*Number of BIs according to the share of income from tenant enterprises*



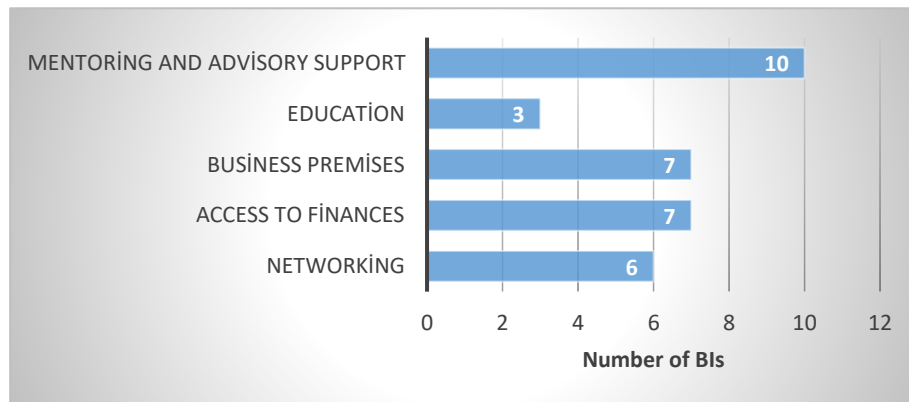
Source: Authors

### **3.3. Services that tenant enterprises most often request from BIs**

Figure 5 shows tenant enterprises' most common requests according to BI managers' experience. Respondents were allowed to answer freely, and the answers obtained were later divided into several categories. Most of the respondents state that tenant enterprises require mentoring and advisory support (n=10), provision of business premises (n=7), and access to financing sources, which includes information on financing programs (n=7). Also, tenant enterprises require the possibility of networking (n=6) and education (n=3) to improve their knowledge and skills in entrepreneurship.

**Figure 5**

*Services of BIs that are most often requested by the tenant enterprises*



Source: Authors

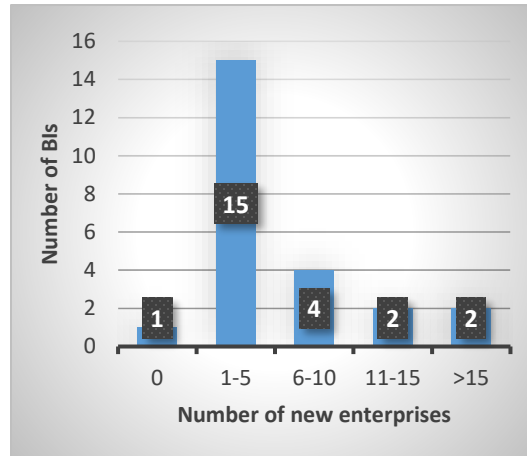
### **3.4. Business dynamics of the tenant enterprises**

58% of the respondents (n=14) state that the incubation period of their tenant enterprises is four to five years, while the remaining 42% of respondents (n=10) claim that the average incubation period of their tenant enterprises is from zero to three years. None of the respondents chose the option of an

incubation period longer than five years. Figure 6 shows how many new enterprises entered the BI last year. 63% of the respondents (n=15) claim that 1 to 5 new enterprises entered the BI. Only one of the respondents declared that not a single new enterprise entered the BI. According to the obtained data, 156 new enterprises joined the 24 BIs that participated in the research.

**Figure 6**

*Number of BIs according to the number of enterprises that entered the incubator in the last year*



Source: Authors

Figure 7a shows how many enterprises left BIs in the last year and independently continued their business outside the incubator. According to the data obtained, a total of 101 enterprises left the 24 incubators that participated in the research to continue their operations outside the BI. 63% of the respondents claim that 1 to 5 enterprises left the BI and continued operating. In comparison, 25% of BIs (n=6) did not have any enterprises that left the incubator to continue operating outside the incubator.

**Figure 7**

*(7a) Number of BIs according to the number of tenants that exited and continued doing business in the last year*

*(7b) Number of BIs according to the number of tenants that exited and ceased to operate*

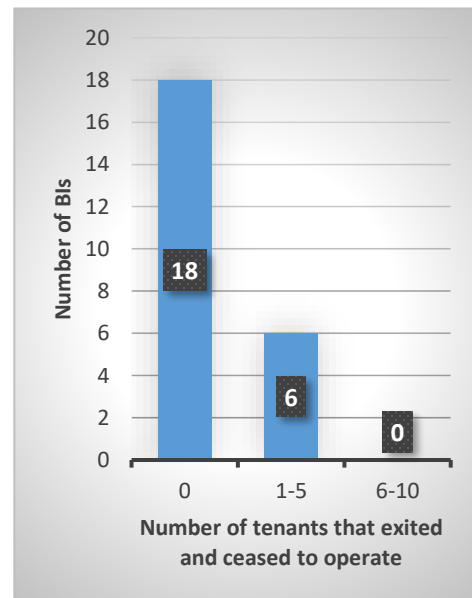
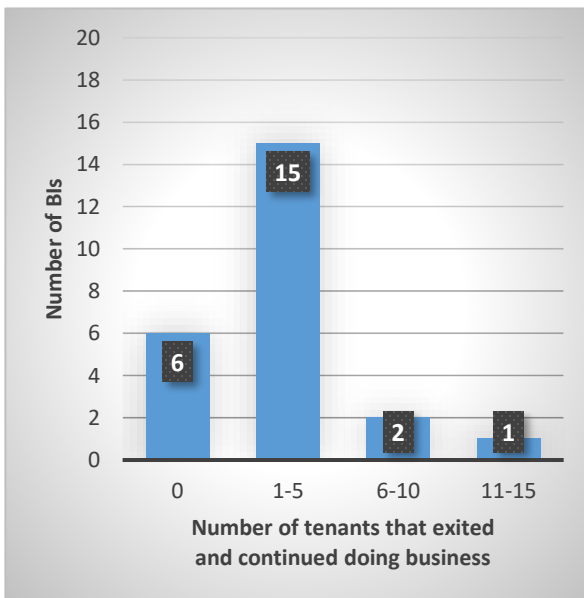


Figure 7b shows how many enterprises left BIs in the last year due to the cessation of business. According to the data obtained from the 24 surveyed BIs, 13 enterprises distributed in 6 incubators left the incubator and stopped operating. 75% of BIs (n=18) had no tenant enterprises that stopped operating. According to the data presented in graphs 5, 6a, and 6b, 42 more enterprises entered BIs than they had left them.

### **3.5. Activity, size, and profitability of tenant enterprises**

The tenant enterprises of incubators for entrepreneurship operate in 34 different sections out of which the 5 most represented are listed here. The most represented in section 62\_ Computer programming, consultancy, and related activities, in which 44 out of a total of 131 tenant enterprises were classified, which is a percentage of 33.6%. Furthermore, the remaining top 5 sections are: 46\_ Wholesale trade, except motor vehicles and motorcycles (n=10), 70\_ Activities of head offices; management consultancy activities (n=8), 71\_ Architectural and engineering activities; technical testing and analysis (n=7) and 73\_ Advertising and market research (n=8). The two most represented sectors are J\_Information and communication (39.7%) and M\_Professional, scientific and technical activities (25.2%). 85 out of 131 tenant enterprises of incubators for entrepreneurship (64.9%) operate in those two sectors.

Enterprises within incubators for new technologies operate in 21 different sections, of which the top 5 are singled out. The most represented section is section 62\_ Computer programming, consultancy, and related activities, under which 20 out of a total of 65 tenant enterprises are classified, which is a percentage of 30.8%. In the top 5 sections are also: 41\_Construction of buildings (n=4), 43\_Specialized construction activities (N=5), 71\_ Architectural and engineering activities; technical testing and analysis (n=9), and 72\_Scientific research and development (n=4). Observing the most represented sectors according to the NKD for incubators for new technologies, these are also the sectors: J\_Information and communication (35.4%) and M\_Professional, scientific, and technical activities (29.2%). 42 out of 65 tenant enterprises in incubators for new technologies (64.6%) are classified in these two sectors.

Figure 8a shows the distribution of the total assets of the observed 196 tenant enterprises of all BIs that participated in the survey. Most of the tenant enterprises (63.78%) have a total asset value of less than HRK 500,000. More precisely, 74 tenant enterprises have a total asset value of up to HRK 200,000, while 51 tenant enterprises have a total asset value between HRK 200,000 and HRK 500,000. The median value of the total assets of tenant enterprises of incubators for entrepreneurship amounts to HRK 293,558. The median value of the total assets of the tenant enterprises of the incubator for new technologies amounts to HRK 293,000.

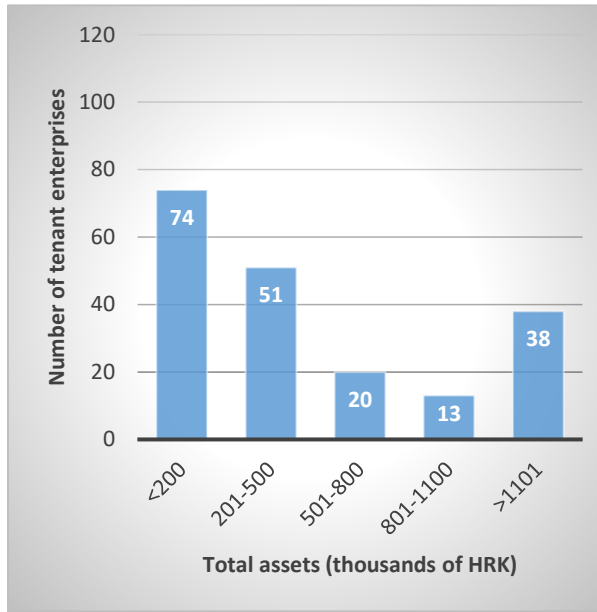
Figure 8b shows the total revenues for 196 observed tenant enterprises. Out of a total of 196 observed tenant enterprises, 100 have a value of total revenues of up to HRK 500,000, which is 51.02% of the observed tenant enterprises. 50% of the tenant enterprises of incubators for entrepreneurship have a value of total revenues lower than HRK 407,117, while for 50% of them, this value is higher. The median value of the total revenues of the tenant enterprises of the incubators for new technologies amounts to HRK 610,930.

Approximately 80% of the tenant enterprises operate with profit, as shown in Figure 8c. Half of those are making a profit of up to HRK 50,000. The median realized profit/loss for tenant enterprises of incubators for entrepreneurship and incubators for new technologies are similar and amount to HRK 25,759 and HRK 28,248, respectively.

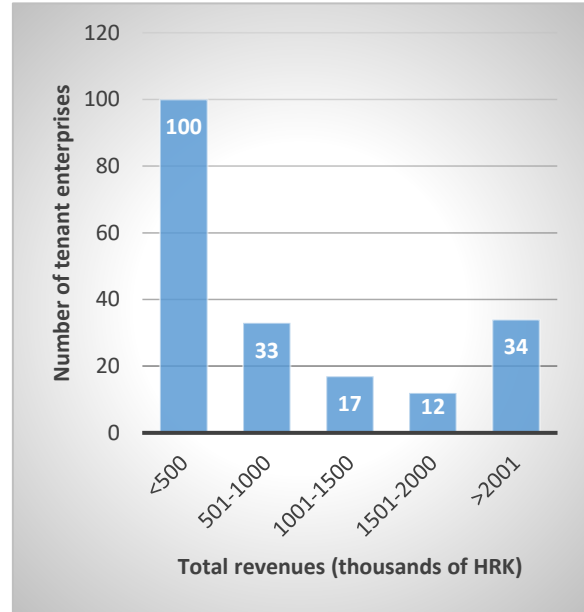
Of the enterprises that make a profit, 45% have a low-profit margin from 0% to 5%, while 25% make a profit margin higher than 20%. Data on profit margin is presented in Figure 8d. The median profit margin for tenant enterprises of incubators for entrepreneurship and incubators for new technologies are similar and amount to 4,09% and 3,48%, respectively.

**Figure 8**

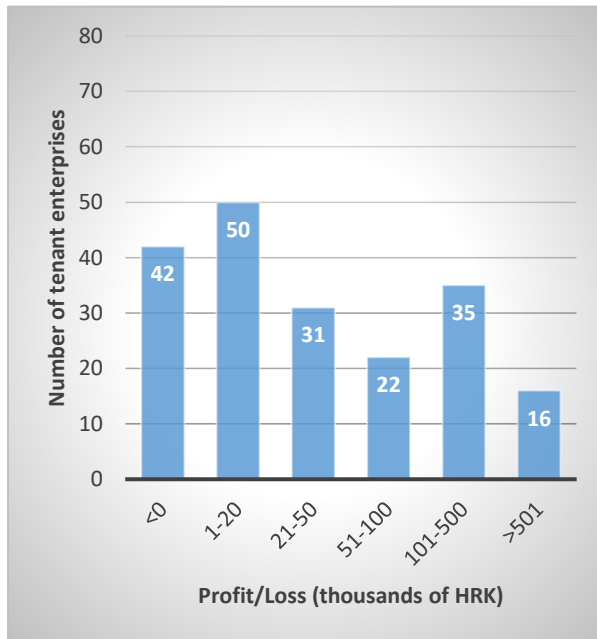
(8a) Number of tenant enterprises according to their total assets



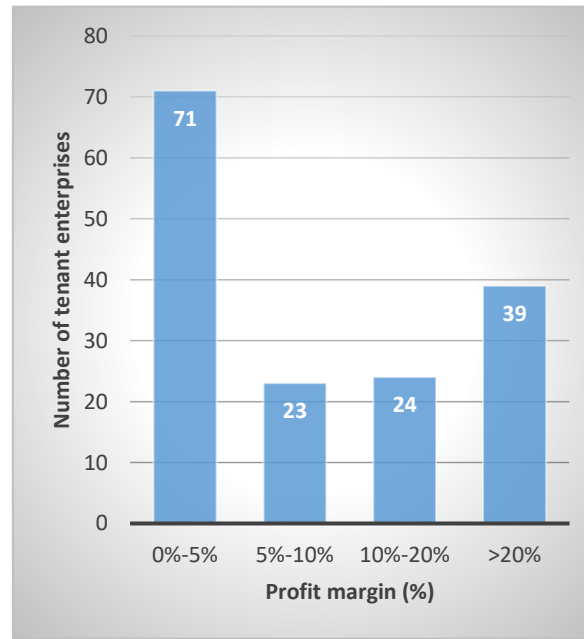
(8b) their total revenues



(8c); their profit/loss



(8d) their profit margin



(Source: Authors)

#### 4. Discussion

By providing professional, educational, and technical assistance to entrepreneurs in the initial stages of developing their ideas, BIs represent an essential part of entrepreneurial infrastructure whose aim is to encourage economic growth and job creation. Whether BIs in Croatia are successful in fulfilling their purpose yet remains to be scientifically evaluated, and this paper is a step in that direction. The empirical analysis addressed the research gap in the studies related to the impact of business incubation in Croatia, thus contributing to the under-researched Central and Eastern European regions.

Of the 24 BIs, most have from 6 to 12 tenant enterprises (n=10) or more than 20 tenant enterprises (n=9). One-third of the BIs do not have any business premises available for new tenant enterprises. One-third have one to five available business premises, while the remaining third has more than six available business premises in the incubator for accepting new tenants. Almost half of the analyzed BIs employ three people or less, which is much lower than the European average of 12. Internal resources and capabilities are the main factors positively affecting the success of BIs. Evidence from Lithuania shows that sometimes due to the small size of the team and weak support of public shareholders after the BI was set up, training and consulting stay at a very superficial level. It is vital to have a dynamic and competent incubator management with entrepreneurial skills and knowledge. Thus, policymakers should support investments in the knowledge and skills of BIs' management teams.

Half of the analyzed incubators derive less than 10% of their revenues from tenant enterprises. While the public funding requirements of incubators will vary depending on location-specific factors and the type of incubator involved, it is possible to assume that incubators should try and increase the proportion of operating income (rent, advisory services, etc.) derived from their activities.

Tenant enterprises most often need mentoring, advisory support, and access to finances, which is by existing research from other countries. The technological skills of incubation managers are especially beneficial for incubatees in science-based sectors. Services based on business expertise such as financial consulting business development and networking are used more frequently than other services. Also, tenant enterprises develop more networks to access intangible resources than tangible resources, which also confirms the necessity to primarily improve the knowledge and mentoring capabilities of BI's managers. As for the expressed demand of tenant enterprises for access to finance, it confirms the result of the previous research, which showed that innovative companies in Croatia to a greater extent believe that access to financing is a limiting factor in their business.

Approximately half of the analyzed BIs state that the incubation period of their tenant enterprises is four to five years, while the remaining 42% of respondents (n=10) claim that it is from zero to three years. The majority of the BIs take in one to five new enterprises yearly. According to the collected data in the last year of doing business, 156 new start-ups entered, and 114 enterprises exited the 24 BIs that participated in the research, increasing tenant enterprises by 42. Out of 114 enterprises that exited, 13 left due to cessation of business. The survival rate of incubated enterprises of 88.6% is high and indicates the success of BIs in fulfilling their purpose.

In the incubators for entrepreneurship and for new technologies, 65% of tenant enterprises are doing business in one of the sectors: J\_Information and communication and M\_Professional, scientific and technical activities. While in both types of incubators, many tenants operate in computer programming and engineering, there are some differences in the structure of activities. Tenant enterprises of incubators for entrepreneurship focus on wholesale trade, management consulting, and advertising, while those in the incubators for new technologies focus on the construction of buildings, specialized construction activities, and scientific research and development. The structure of activities reflects the differences between the two types of BIs as they are envisioned by the legislator.

Two-thirds of the tenant enterprises of all incubators have a total asset value of less than HRK 500,000. The median total asset value of approximately HRK 293,000 is found in tenant enterprises of incubators for entrepreneurship and incubators for new technologies. The median total income amounts to HRK 407,117 for the tenant enterprises of incubators for entrepreneurship and HRK 610,930 for the tenant enterprises of incubators for new technologies. Approximately 80% of the tenant enterprises operate with a profit, and 45% of those have a low-profit margin in the range of 0% to 5%, while 25% of those have a profit margin higher than 20%. The median values of the realized profit/loss and profit margin are similar for tenant enterprises of incubators for entrepreneurship (HRK 25,759 and 4,09%) and incubators for new technologies (HRK 28,248 and 3,48%). The obtained results should be complemented with further research in two directions.

## 5. Conclusion

Firstly, future research should compare the financial results of tenant enterprises with the financial results of start-ups doing business in the same sectors outside the BIs to measure the impact of incubation. There is some research on that topic in other countries with surprising results. Czech incubators have not been successful in supporting the growth of incubated firms. Compared to the control group, incubated firms reported on average lower values of sales, price-cost margin, assets turnover, value-added, size of total assets, and size of personnel costs. Research performed on innovative Italian start-ups points towards a significant negative effect of incubator tenancy on sales revenues and no significant effect of incubation on job creation. Findings also suggest that the initial negative impact of incubation on sales revenues turns into a positive effect in the long term. This research suggests that public policymakers should lower their expectations regarding the contribution of BIs to economic growth. However, research also shows that when BIs are not economically profitable since they need public funds to start operating, they do have social profitability. Thus, the comparison is necessary on the country level so the policymakers can exercise evidence-based control over the BIs' effectiveness.

Secondly, since the representatives of BIs participated in the survey, in the future, this research should be complemented by the perception of tenant enterprises about the quality of services provided by BIs. Investments should improve the quality of provided services in the knowledge and skills of incubator employees. Better services on all pyramid levels should unlock the potential of start-ups' growth and development.

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