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BRIDGING EDUCATION AND ENTERPRISE: SUCCESS FACTORS OF STUDENT BUSINESS INCUBATORS IN CROATIA

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Abstract

The paper aims to examine the operation of student business incubators, which play an increasingly important role in fostering entrepreneurship, innovation, and university–industry collaboration, especially in emerging entrepreneurial ecosystems such as Croatia’s. The research was conducted through in-depth interviews with five student business incubator managers. The study identified the dominant services provided by incubators, the barriers faced by their tenants, incubator outcomes, different forms of cooperation with the business sector, and plans for the future. The paper concludes that the most successful incubators provide support in: (1) idea development; (2) prototyping; (3) investor search; (4) market entry; and (5) identification of opportunities based on the needs of the business sector. The results will help other student business incubators conduct benchmarking and assist organizations planning to establish a student business incubator in implementing the identified successful practices.

Keywords: *entrepreneurship, student business incubators, Croatia, entrepreneurial infrastructure, university*



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1. INTRODUCTION

A developed socio-scientific and technological system, primarily focused on research and the development of new technologies, as well as on the establishment of knowledge-based small and medium-sized enterprises, serves as a driver of entrepreneurial economic development in modern states (Zekić & Bukovac, 2008). Business incubators play an important role in the early stages of entrepreneurial ventures. Student business incubators are established within higher education institutions, and their main role is to provide support and the necessary resources to students who decide to start their own entrepreneurial ventures.

The aim of this paper is to analyze the role of student business incubators by examining the services they offer, the characteristics and challenges of their users, the outcomes of supported ventures, their collaboration with the business sector, and their future development initiatives, with the purpose of identifying the characteristics of the most successful incubators. This topic is of great importance, as promoting youth entrepreneurship is essential for building an innovative economy; young people's mobility, creativity, and adaptability make them a key strategic resource for national development (Cacija et al., 2022). The second chapter of the paper provides insight into the development of entrepreneurial incubators in Croatia and presents an overview of scientific research specifically addressing the operations of student business incubators. The research was conducted through semi-structured interviews with managers of student business incubators, as elaborated in the third chapter. The fourth chapter presents the results collected through the interviews, organized by thematic areas, while the fifth chapter provides a discussion and the sixth concludes the paper.

2. BUSINESS INCUBATOR AS AN ENTREPRENEURIAL SUPPORT INSTITUTION

The problem of resource scarcity faced by newly established enterprises represents a significant obstacle to their growth and to overall economic development. Business incubators are entrepreneurial support institutions that, according to the *Law on the Improvement of Entrepreneurial Infrastructure* (NN 93/13; NN 138/21), are defined as legal entities focused on providing support for the successful development of entrepreneurship through business services and resources intended for entrepreneurs, as well as office space and facilities under more favorable conditions for beginner entrepreneurs (Morić Milovanović & Tutić, 2021a).

Business incubators support start-ups that are either in the initial stages of launching their business or in the growth and development phase but lack their own premises (Čižmadija & Stanković, 2011). They nurture newly established companies in order to help them survive the most vulnerable period and prepare them for the many challenges they will face in the market (Šimunković, 2016). The main goal of business incubators is to produce companies that are financially independent and self-sustainable after the incubation process. This is achieved by

providing business, administrative, educational, and other services to incubator tenants (Morić Milovanović & Tutić, 2021a). The advantages that business incubators offer to companies involved in the incubation process include rapid problem-solving, access to business information, the exchange of experiences with companies in similar situations, the development of business networks, and a reduction in the time required to launch new products or services (Nikolić & Zorić, 2014).

It is widely acknowledged that the first business incubator was established by Joseph Mancuso in 1957 in Batavia, New York, within a former Massey-Ferguson facility (Leblebici & Shah, 2004). In the Republic of Croatia, the establishment of business incubators began in 1991, initially in the cities of Rijeka, Sisak, and Zagreb (Milovanović & Tutić, 2021a). The founding of business incubators in Croatia first occurred in counties with universities, which recognized their importance for economic development. Based on data from the Unified Register of Entrepreneurial Infrastructure (Ministarstvo gospodarstva i održivog razvoja, n.d.), there are currently 44 active business incubators in Croatia, with a balanced regional distribution. Northwestern Croatia has 13 business incubators, Eastern and Central Croatia have 14, and Adriatic Croatia has 18.

Entrepreneurial ecosystems comprise a set of individual, organizational, industry, and environmental elements—such as leadership, dynamic capabilities, culture, capital markets, networks, and customers—that intertwine in complex ways (Guerrero et al., 2017). In an entrepreneurial society, universities should take a proactive role by establishing mechanisms to foster an entrepreneurial culture, including business incubators (Jamil, Ismail, & Mahmood, 2015). Without the infrastructure provided by campus-based business incubators to build and sustain a community of nascent entrepreneurs that benefits from continuous peer learning, gaps in the entrepreneurial ecosystem may emerge (Browne, 2024).

The level of development of the economic environment directly influences students' entrepreneurial intentions (Požega & Ribić, 2022). Student entrepreneurship refers to entrepreneurial activities undertaken by students during their academic education (Šimunković, Has, & Milojević, 2019). Student entrepreneurial incubators provide users with office space, business support, access to new technologies, training, and credibility among various stakeholders (Jones, Meckel, & Taylor, 2021). Students within these incubators are supported by mentors who help them navigate business challenges, and it is crucial that these mentors have entrepreneurial experience (Šimunković, 2016). The primary role of student business incubators is to provide professional and advisory support that empowers the student population to engage in entrepreneurial thinking and action (Ivanković, Nedović, & Đapić, 2015). Previous research has identified key enabling factors for student business incubators, including access to resources, mentoring and expertise, networking opportunities, and financial support (Rukmana et al., 2023).

The main goal of this paper is to determine how many active student business incubators exist in the Republic of Croatia and to analyze how they operate. Specifically, the study seeks to answer the following research question:

RQ1: What services do student entrepreneurial incubators provide, and with what goals?

Students are most often motivated to join business incubators by profit and passion for the development of new products through which they achieve self-actualization (Prabowo & Syaravina, 2022; Purwaningsih et al., 2017). Approximately one-third of student entrepreneurs cite making a positive impact in their communities as a primary motivation for starting a business (Osiobe & Winingham, 2020). Peer learning within incubators is fostered through unplanned interactions—enabled by close physical proximity and perceived commonalities that do not result in direct competition—and by a shared entrepreneurial identity shaped through environmental symbolism and discourse (e.g., awards and photographs of role models) (Casulli & Richardson, 2016). Previous research has shown that participation in incubation programs significantly enhances students' motivation (Patmanthara et al., 2025). Moreover, a relatively strong relationship exists between the presence of incubated entrepreneurs on campus and students' entrepreneurial intentions (Cai & Zhang, 2020), while self-oriented motivation is positively associated with student start-up survival (Blank, 2023). The subsequent research question addresses the individuals utilizing the incubators:

RQ2: Who are the users of student entrepreneurial incubators, what obstacles do they face, and what influences their motivation?

Several studies have demonstrated a positive impact of university business incubators on students' start-up intentions and on the performance of supported technology-based enterprises (Guerrero et al., 2017). Significant improvements in entrepreneurial competencies, professional networking, and business outcomes have been observed among students who participated in incubation programs compared to those who did not (Ramli, 2025).

The absence of rigorous assessment tools and methodologies contributes to uncertainty regarding the effectiveness of business incubators (Bennett, Yábar, & Saura, 2017). The success of a business incubator is often measured by the number of jobs created and the revenue generated. However, in some cases, teams operating within an incubator may realize that their business model is not viable, which can also be considered a form of success. When failure occurs at an early stage rather than later in the business lifecycle, valuable time and financial resources are preserved (Covelli et al., 2020). To assess the success of student business incubators in Croatia, the following research question was formulated:

RQ3: How many entrepreneurial ventures have been launched within student incubators, and have they survived in the market?

For university business incubators to achieve full effectiveness, they must be integrated into the local entrepreneurial ecosystem (Brennitz & Zhang, 2019; Jones et al., 2021; McAdam et al., 2016; Nicholls-Nixon et al., 2020) and connect

research outcomes with industry and development initiatives (Hassan, 2024). University-based business incubators facilitate knowledge transfer from universities to small firms, while universities benefit from stronger links with local communities and improvements in student employability outcomes (Piterou & Birch, 2016). The presence of a campus-based business incubator that is closely integrated with extracurricular entrepreneurship activities fosters a cohesive graduate start-up community and sustained peer support (Browne, 2024). Previous research has shown that academic incubators seeking to maximize their impact—beyond relying on physical resources provided by their host institutions—should focus on strengthening partnerships with the business sector, diversifying funding sources, promoting an entrepreneurial culture, and developing customized support programs (Budac & Ilie, 2024).

Teamwork involving students from different educational levels and fields of study, as well as contributions from mentors and experts across various applied disciplines, is essential for the development of new ideas (Mele et al., 2022). To examine whether this is the case for student business incubators in Croatia, the following research questions are posed:

RQ4: In what ways do student entrepreneurial incubators promote collaboration between educational institutions and the business sector?

RQ5: What initiatives do student business incubators plan to develop in the future?

3. METHODOLOGY

The paper used both primary and secondary data sources. Semi-structured interviews with incubator managers served as the primary data source. Secondary data sources included incubator websites. Since no official list of active student business incubators exists, the starting point was previous research by Čubela (2019), which identified 12 student business incubators in Croatia. This list was verified through telephone calls, which confirmed that 8 incubators are currently actively working with students. An additional incubator was identified through a review of higher education institutions' websites. However, it remains possible that some incubators are not included in the final list.

Table 1 presents student business incubators operating within higher education institutions in Croatia, arranged by year of establishment. As shown in Table 1, the majority of student business incubators – specifically five – are located in Zagreb. Of the nine identified student entrepreneurial incubators, only two are registered in the Unified Register of Entrepreneurial Infrastructure: the Centre for Technology Transfer and the PAR Student Entrepreneurship Incubator.

Table 1 Student Business Incubators in Croatia

Higher education institution	Name of incubator	Year of establishment
Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb	The Centre for Technology Transfer	1996.
Faculty of Economics & Business, University of Zagreb	Student Business Incubator	2009.
Faculty of Economics, Business and Tourism, University of Split	Student Business Incubator	2009.
VERN' University	VERN' Startup Inkubator/Akcelerator	2009.
Bjelovar University of Applied Sciences	Student Business Incubator VUB	2010.
PAR University of Applied Sciences	PAR Student Entrepreneurship Incubator	2011.
Faculty of Economics and Tourism "Dr. Mijo Mirković", Juraj Dobrila University of Pula	Student Business Incubator SPIN	2013.
University of Applied Sciences Lavoslav Ružička in Vukovar	Student Business Incubator – VUPI	2013.
Faculty of Electrical Engineering and Computing, University of Zagreb	Startup incubator SPOCK	2016.

Source: Author's research based on official websites

The Centre for Technology Transfer, established in 1996, is a student business incubator of the Faculty of Mechanical Engineering and Naval Architecture. Its establishment created an entrepreneurial infrastructure that primarily connects the Faculty's scientific and research capacities with domestic industry (Centar za transfer tehnologije, n.d.).

The Student Business Incubator at the Faculty of Economics in Zagreb, founded in 2009, was designed as a support system for early-stage entrepreneurs. It provides access to facilities, equipment, internet, expert guidance, and opportunities for seed funding (Ekonomski fakultet u Zagrebu, n.d.). The Student Business Incubator at the Faculty of Economics in Split, also established in 2009, is open to all students of the University of Split. Through the incubator, students have access to a technically equipped workspace, public consulting services, mentoring support during the development of business models and projects, and opportunities to participate in international start-up conferences (Ekonomski fakultet u Splitu, n.d.). Support for start-up projects at VERN' University includes the provision of workspace and technical infrastructure, mentoring, as well as opportunities for business networking and for presenting projects to potential investors (VERN' University, 2025).

In 2010, the Bjelovar University of Applied Sciences founded the Student Business Incubator VUB to foster entrepreneurial skills and innovation among students. The incubator aims to prepare students for engagement in entrepreneurial environments, facilitate the development of projects based on knowledge and emerging technologies, strengthen links with the business sector, and promote technological projects aligned with industry (raSTEM.hr, n.d.).

The PAR Student Entrepreneurship Incubator, established in 2011, was designed to support students of the PAR University of Applied Sciences by enabling them to implement business ideas in the early stages of their ventures. Students have access to necessary equipment, workspace, internet, professional assistance, opportunities for initial funding, and participation in PAR projects and those of its partners, allowing them to gain practical experience and skills (PAR, n.d.).

Founded in 2013, the Student Business Incubator SPIN at Juraj Dobrila University of Pula provides support to both current and former students in developing their business ideas. The incubator assists in the preparation of business proposals and plans, facilitates the presentation of ideas to potential investors and partners, and supports entrepreneurs from the inception of their ventures to independent market operation (Sveučilište Jurja Dobrila u Puli, n.d.).

The Student Business Incubator VUPI, established in 2013, focuses on equipping young individuals with entrepreneurial skills through educational activities that emphasize the identification of business opportunities, the development of business plans, and the initiation of entrepreneurial ventures (Veleučilište Lavoslav Ružička u Vukovaru, n.d.).

The start-up incubator SPOCK provides support to students, researchers, and scientists in transforming their ideas and business projects into successful start-up ventures. Participating teams are offered free workspace, access to various types of equipment, and mentoring support. In addition, the program provides continuous guidance and financial support for selected projects (Spock, n.d.).

It is also important to mention the Startup@FOI program, a support initiative for students and alumni of the Faculty of Organization and Informatics, University of Zagreb, aimed at establishing, developing, and managing entrepreneurial ventures. In cooperation with the Technology Park Varaždin, participating teams are provided with office space within the Technology Park, accounting and legal support, networking opportunities with successful representatives of the IT sector, and professional mentoring (Fakultet organizacije i informatike, n.d.).

In Croatia, the Network of Student Entrepreneurial Incubators is also active. This program is managed by HAMAG-BICRO and the Zrinski Educational Group and operates as a virtual platform where students, together with their mentors, develop business ideas (Hrvatska banka za obnovu i razvitak, 2018).

The results of a systematic literature review indicate that the majority of research on university business incubators conducted between 2000 and 2019 employed qualitative research designs (Ali et al., 2020). In this study, a grounded theory strategy was applied (Glaser & Strauss, 2017), which refers to an inductive approach to theory development grounded in empirical data.

All nine student business incubators listed in Table 1 were contacted; however, managers from only five incubators agreed to participate in the study. As

a result, theoretical saturation may not have been fully achieved, which represents a limitation of the research.

After identifying active student business incubators, semi-structured interviews were conducted with incubator managers, enabling them to share their experiences and provide detailed insights into incubator operations. To enhance the quality of responses, interview questions were sent to participants in advance via email. As the interviews were semi-structured, participants were encouraged to express their own perspectives, which enriched the data with personal insights and experiences.

The interviews were conducted online using platforms such as Google Meet and Microsoft Teams to facilitate interaction with participants. Prior to each interview, participants were informed about the purpose of the research, the study objectives, and the approximate duration of the interview. Verbal consent for audio recording was obtained from each participant. All interviews were conducted individually, without the presence of third parties, ensuring a comfortable environment for open conversation. The average duration of each interview was approximately 30 minutes, and all interviews were conducted in July 2024.

Following data collection, interview transcripts were analyzed manually. The analysis process began with repeated readings to ensure data familiarization, followed by segmentation and initial coding. Focused coding was then applied to identify the most salient and recurring codes, which were subsequently grouped into categories (Charmaz, 2006).

4. RESULTS

The analysis of the data collected during the interviews was structured according to the established research questions. To ensure the anonymity of the participants in the presentation of the results, the interviewees were assigned the following labels: Respondent A, Respondent B, Respondent C, Respondent D, and Respondent E.

4.1. Purpose and Functioning of Student Business Incubators in Croatia

The student business incubators included in this research operate either as organizational units within higher education institutions or as independent associations. The analyzed incubators pursue two primary objectives. The first objective is the promotion of entrepreneurship, which is achieved through educational activities, the creation of a supportive entrepreneurial environment, and assistance in the development of innovative ideas. In this context, Respondent E highlighted the importance of promoting entrepreneurship as an alternative career path. The second objective is to support students' career development. For

example, Respondent A emphasized the role of incubators in developing practical skills and strengthening an entrepreneurial mindset:

„The incubator started with the idea of strengthening entrepreneurship and the entrepreneurial mindset among young people. Today, most young people are already familiar with the concept of a start-up, which used to be largely unknown. As a result, we now offer various training programs on current topics such as digital and green transformation. We continue to support those who want to launch their own entrepreneurial ventures, but in addition to that, we also provide students with soft skills that they may not encounter through formal education.“

Respondent C emphasizes the importance of simulating a real working environment and easing students' transition into industry, stating: *“We teach them how to swim in shallow water.”* Respondents A and B note that, through contact with experienced entrepreneurs and business professionals within the incubator, students gain valuable experience and networks that enable them to secure internships or even employment during their studies. In addition, students connect with proactive individuals, which opens up further opportunities for personal and professional development.

All analyzed incubators provide users with workspace, associated infrastructure, advisory and organizational services, entrepreneurial and technological education, as well as support in business planning and market research. Through these services, users receive continuous support from the development of the initial idea to its realization. A common theme emphasized by all respondents is the importance of connecting users with mentors and experts from diverse industries. In this regard, Respondent D points out:

„We're supported in the implementation by 50 mentors, most of whom are founders of other successful startups. So, we see this transfer of knowledge from successful startup founders to those who are just getting started as a major—really major—advantage. Another key aspect is our interdisciplinary approach: we connect participants in the program from different faculties. At the same time, we also help them connect with experts from the business sector. That network of contacts our participants gain is, for example, one of the biggest benefits they receive.“

Respondent E highlights that the incubator also facilitates connections between novice entrepreneurs and partner companies from the real sector, which take on mentoring roles. Most mentors in the analyzed student entrepreneurial incubators come from professional or academic backgrounds and are most often lecturers or professors, start-up founders, or leading experts in their respective industries. The flexibility of mentors is also emphasized, as they are open to holding additional meetings when necessary. Only one of the five analyzed incubators assigns a dedicated mentor to each team.

Respondent A notes that their incubator supports team formation by allowing individuals to join existing teams or by creating new teams in which students with diverse knowledge and skills collaborate, while senior students share

their experience with junior students. Respondent C emphasizes that synergy among students is actively encouraged, enabling the exchange of ideas. Respondent D explains that all students selected for their program participate in an educational curriculum covering key aspects of running a start-up, including idea validation, market research, investment acquisition, public speaking and pitch preparation, business modeling and development, prototyping, and company formation. Through this approach, the incubator enables students to test their solutions under real market conditions and prepares them for market entry. Respondent E considers a personalized approach to be the most important aspect of supporting new users and emphasizes constant availability to students, regardless of standard working hours, ensuring timely and responsive support.

To monitor incubator performance, the analyzed incubators use indicators such as the number of participants, the number of implemented activities (e.g., workshops, lectures, and competitions), the number of start-ups founded, and the amount of investment secured. Respondents B and D explain that tracking the number of applications for incubator programs provides insight into the attractiveness and relevance of the programs to the target audience. Respondent E emphasizes that full occupancy of office space indicates strong user interest and program success. Respondent D adds that they also focus on the number of industrial and scientific partners with whom the incubator collaborates. In contrast, Respondent C notes that evaluating the success of their incubator is challenging due to the absence of clearly defined monitoring indicators. A common practice among most respondents is the use of user feedback, highlighting the importance of monitoring user satisfaction and adapting programs to user needs. Respondent A explains that changes were introduced after realizing that students were dissatisfied with long educational programs spread across the semester, leading to the adoption of shorter formats, including hybrid models and international collaborations:

“We realized that students are no longer so keen on very long training programs that last an entire semester. They prefer something faster, shorter, and more hybrid. We even had one year when the entire program was delivered in English, with only international lecturers. This year, we had a mix of lecturers from three universities across Europe. We follow trends, so to speak, and adapt accordingly.”

4.2. Users of Student Business Incubators

Although all analyzed incubators count current students of the higher education institution that established the incubator among their users, certain differences in user structure can be observed. According to Respondents A and C, the primary users are current students, as well as recent graduates who did not have the opportunity to participate while they were still enrolled. Respondent C additionally notes that the incubator also involves high school students in projects and educational activities, thereby contributing to the promotion of the faculty and attracting prospective students. In contrast, Respondent D emphasizes that their

incubator, in addition to students, places a strong focus on researchers and scientists, including faculty members and employees of other research institutions. Respondent E states that, apart from students of the higher education institution, there are no other users of the incubator. Respondent B highlights that although students constitute the main user group, the incubator's services are open to all interested individuals who wish to participate in its programs and activities. Overall, student entrepreneurial incubators bring together a diverse range of users, including students, alumni, prospective students, professors, and researchers.

All respondents emphasize the importance of an application process, which is typically followed by a selection procedure. Respondent A explains that applications are open throughout the year and that all applicants are invited to an interview, during which the business idea, team composition, and potential forms of support are evaluated. Respondent B highlights that students are encouraged to apply through informational presentations. Respondent D notes that the application process requires information about the team, the idea, and previous experience. Respondent E explains that the incubator announces a public call and appoints a commission to evaluate the submitted applications.

According to the respondents, the most significant obstacle faced by students in entrepreneurship is a lack of business experience. This deficiency leads to limited entrepreneurial ideas, insufficient project management skills, and insecurity in decision-making. Incubators aim to address these challenges through training, workshops, and mentoring. Another obstacle identified in the process is students' reluctance to adapt or modify their ideas, as well as a lack of perseverance, which often results in abandoning projects, as Respondent A explains:

„I think the biggest obstacle is a lack of persistence. Everyone believes their idea is the best and sticks to it rigidly, without being willing to adjust. In reality, there is competition in every market segment. When they analyze the competition, they often say, “That doesn't exist.” Then, when you start breaking down that perception, many of them give up instead of continuing to look for another path or analyzing what competitors did wrong. I think that's the biggest issue we see. Another common reason for giving up is when they realize there is no opportunity for exponential growth.“

To address these challenges, incubators provide support and guidance in adapting ideas. They also assist students in writing business plans and navigating administrative procedures.

Respondents A and D note that students are most motivated by networking opportunities with experienced entrepreneurs in their fields of interest. This reflects the individualized approach taken toward each student, which helps sustain motivation. Respondent E similarly emphasizes the importance of a personalized support approach, as it fosters trust and helps students overcome fears. Respondent A highlights that team-building activities are organized for incubator users to enhance collaboration and cohesion. Respondent B adds that certain benefits, such as exemptions from some academic obligations, are offered to enable students to

dedicate themselves fully to their entrepreneurial projects. Respondent B also mentions that competitions with awards are regularly organized, providing students with opportunities to gain recognition for their work. Respondent C points out that participation in the incubator is integrated into project-oriented courses, which motivates students by combining practical entrepreneurship experience with academic requirements.

4.3. Entrepreneurial Ventures in Student Business Incubators

Respondent A notes that students often begin with a specific idea but may realize during the incubation process that the idea is not viable, and therefore, a company is not established. However, projects that prove sustainable within the incubator often result in successful business ventures. Respondent A highlights that approximately forty entrepreneurial ventures have been launched through their incubator, all of which continue to operate successfully, with none having closed down. The respondent also emphasizes that some current mentors engaged by the incubator actually started their careers through its activities.

In contrast, Respondent B states that, since the establishment of their incubator, no entrepreneurial venture has continued successfully after students completed their studies. The main reasons for failure include the lack of a sustainable business model, insufficient experience and knowledge in managing an entrepreneurial venture, and a lack of motivation or commitment to see the idea through to completion. Respondent B adds that such outcomes are understandable, given that students face numerous other obligations and challenges that limit their ability to fully dedicate themselves to entrepreneurial projects.

Respondent C emphasizes that students in their incubator do not launch independent entrepreneurial ventures; rather, through project-oriented courses, they develop software applications for real clients, most often in the education sector. As there are no strict deadlines, students work at a pace that suits them best, although this can create challenges in terms of business organization. The primary goal of this incubator is to provide students with practical experience and facilitate the development of useful applications.

Furthermore, Respondent D highlights that their program annually accepts approximately 10–15 teams that complete the training. Over the past three years, 16 start-ups have been established, collectively raising €1.7 million in investments and grants. Successful start-ups include companies applying advanced technology in fields such as agronomy, medicine, sports, and law.

Respondent E states that, since the establishment of their incubator, a total of six entrepreneurial ventures have been launched, three of which are currently active within the incubator. Two companies founded within the incubator continued operating after the student founders graduated. The successful ventures from this incubator primarily provide business services and educational solutions.

One venture failed because the student founders were unable to balance their personal, academic, and business obligations.

4.4. Collaboration Between Educational Institutions and the Business Sector Through Student Business Incubators

Respondent A explains that their incubator plays a key role in connecting educational institutions with the business sector. The faculty hosting the incubator has a well-developed network of business partners, with whom it collaborates through internship programs. This also facilitates the involvement of mentors from industry. The respondent notes that the incubator regularly participates in organizing events that bring together entrepreneurs, students, and professionals. These activities ensure continuous contact with entrepreneurs and contribute to building a strong network of collaborators. Furthermore, as Respondent A points out, every new idea presented to the incubator undergoes a process of evaluation and adaptation. If an idea is not highly innovative at the outset, the incubator seeks to identify potential directions for improvement. In this way, students are guided toward the use of the latest technologies or encouraged to develop environmentally friendly solutions, which are particularly in demand today. The respondent also emphasizes that, through consultations, they help students make their projects more relevant in a broader social context.

Respondent B highlights that the incubator organizes workshops, lectures, and networking events, providing students with opportunities to learn from experienced professionals across different industries. Collaboration with the business sector allows companies to gain access to talented young individuals. Respondent B stresses that the incubator promotes innovation and the development of new technologies through cooperation with tech companies, thereby giving students access to the tools and resources necessary for the development of their projects. Additionally, the incubator organizes workshops in which students work on real-life problems presented by companies from the business sector.

Respondent C notes that collaboration between educational institutions and the business sector through the incubator is based on building strong connections between academia and industry, particularly within the highly developed IT ecosystem of the city where the incubator is located. The respondent points out that these connections are maintained through informal contacts:

“We have very good contacts with all the IT companies at the city level; we know each other personally. I’m a godfather to some of them, we go for coffee—you know—once a week, go hiking, whatever... We don’t talk only about students; we talk about the technology that’s currently relevant.”

The network of relationships with key players in the IT industry enables the incubator to recommend both young and experienced students for employment quickly and effectively. This synergy contributes to a 100% employment rate for students after graduation, which serves as an indicator of the success of the

collaboration. Through contacts with alumni working in the IT sector, as well as regular discussions on modern technologies, students are provided with relevant projects for their final theses. Moreover, the incubator collaborates with high schools, technology parks, student employment services, and local organizations to broaden its impact.

Respondent D emphasizes that, initially, the majority of registered users came from the home faculty. However, today the incubator cooperates with 12 additional scientific partners. As a result, the partner network provides a diverse source of innovative ideas and attracts a larger number of applicants to the incubator's programs. The respondent also notes that they have established collaboration with a substantial number of industry partners:

“We ask industry partners what their needs are, what kinds of challenges they face in their operations, and what might help them. Then we look at whether we can connect them with scientists or startups that could offer a solution in that process.”

In addition, the incubator places strong emphasis on organizing various events where representatives from the business sector can meet, exchange knowledge, and share experiences. It actively fosters innovation by supporting students in the development of prototypes. Once a prototype is created, the incubator connects students with relevant business partners, who assist in transforming the prototype into a finished product ready for market launch. In this way, the incubator promotes the full process of innovation commercialization. Finally, students are also supported in identifying and securing customers for their products.

Respondent E explains that they organize an annual “Career Fair,” during which companies affiliated with the incubator present themselves to students as well as to other businesses. The respondent emphasizes that their strategy for fostering innovation and the development of new technologies is tailored to the specific characteristics of individual entrepreneurial ventures. When a student selects the field in which they wish to work, an analysis is conducted to identify the most relevant technologies for their business. Based on this analysis, the student is then paired with mentors whose expertise and experience align with the chosen field.

4.5. Planned Initiatives and Future Projects

The analysis of research findings concludes with the planned initiatives and projects that incubators aim to implement in the future. Respondent A states that their planned initiatives focus on the green and digital transition, particularly on creating digital products that simplify everyday tasks.

Respondent B notes that their future plans include expanding existing programs to accommodate a larger number of students and developing collaboration with other student business incubators. In the case of Respondent C, the incubator's planned initiatives are aimed at continuing the development of

digital solutions and applications at the local level. The incubator recognizes the importance of digitalization and strives to provide accessible and functional digital products.

Respondent D highlights that one of their main future initiatives is the organization of a five-day training program focused on sales, branding, go-to-market strategies, and attracting investment. Additionally, teams with already developed projects will participate in an intensive five-day mentoring program, with mentors primarily from the United States, who will guide them in creating concrete plans for raising investments over the following 12 months. Respondent E mentions that their future initiatives include opening new business premises and strengthening the promotion of the incubator.

5. DISCUSSION

Student business incubators in Croatia were established with two primary objectives: creating a supportive entrepreneurial environment and providing students with career development support. Participation in an incubator, even without launching one's own company, allows students to gain practical work experience and facilitates future employment. The analyzed incubators provide users with workspace, infrastructure, advisory and organizational services, entrepreneurial and technological education, as well as support in business planning and market research. The most successful incubators place strong emphasis on networking. These findings align with previous studies showing that access to resources such as mentoring and networking positively correlates with incubator performance and venture survival prospects (Morić Milovanović & Tutić, 2021b).

Although students of higher education institutions constitute the primary users, incubators also engage alumni, prospective students, researchers, and professors, creating a diverse and dynamic environment. In the selection process, incubators assess both the quality of the business idea and the capabilities of the applicant team.

Despite various success stories, students face common challenges. The main obstacle identified by respondents is a lack of business experience, which results in a limited number of entrepreneurial ideas, insufficient project management skills, and insecurity in decision-making. Other challenges include reluctance to adapt or modify ideas and limited perseverance, which often leads to project abandonment. Incubators address these challenges by providing guidance in adapting ideas and actively motivating students. Motivation is enhanced through connections with experienced entrepreneurs, team-building activities, benefits such as exemption from certain academic obligations, and the organization of competitions with awards.

The number of successfully implemented entrepreneurial projects varies considerably among the analyzed incubators. Some incubators have not produced

ventures that continued beyond graduation, while others report approximately forty ventures still operating successfully. It is noteworthy that the incubators reporting the most significant results in terms of new start-ups involve not only students but also scientists and researchers. By integrating experienced professionals alongside student entrepreneurs, these incubators benefit from a combination of practical expertise, advanced technical knowledge, and innovative ideas. This collaboration enhances the quality of start-ups, contributes to more effective commercialization of projects, and increases their survival prospects.

It is important to note that some incubators do not aim for students to launch their own companies but focus instead on project-oriented courses, through which students develop software applications for real clients. The primary goal of such incubators is to provide practical experience and develop useful applications.

Managers of Croatian student business incubators, consistent with previous research (Ramli, 2025), also observed improvements in entrepreneurial competencies among participating students compared to non-participants. They further recognize the value of early-stage failure as a learning opportunity, rather than later-stage failure in the business cycle (Covelli, Morrissette, Lindee & Mercier, 2020).

Incubators function as bridges connecting academia and the business sector, leveraging well-established networks of business partners that facilitate industry mentorship. They regularly participate in events bringing together entrepreneurs, students, and professionals. Collaboration with the business sector benefits companies by providing access to talented young individuals. For students, engagement with industry provides access to new technologies, tools, and resources necessary for project development, as well as relevant topics for final theses.

Several characteristics of the most successful incubators, in terms of ongoing ventures, were identified:

1. Identification of entrepreneurial opportunities: Successful incubators monitor the business sector to identify challenges and focus on developing startups that address these needs.
2. Support in shaping ideas: Incubators assist users in refining their ideas. Concepts that may initially lack innovation are developed through mentoring and guided toward utilizing the latest technologies or creating environmentally friendly and socially relevant solutions.
3. Support in prototyping: After shaping the idea, incubators connect users with business partners who provide the technology and resources needed to develop prototypes.
4. Support in attracting investors: Incubators link users with developed prototypes to potential investors who can provide the resources necessary to bring the product to market.

5. Support in market launch: Incubators assist students in finding customers and ensuring that projects are successfully commercialized.

Future plans for incubators focus on projects related to the green and digital transition, expanding existing programs, and developing new initiatives, including international programs aimed at attracting investment and facilitating market entry.

6. CONCLUSION

Currently, at least nine student business incubators are actively operating in the Republic of Croatia, with the majority located in Zagreb. The analysis demonstrates their significant role in fostering entrepreneurial thinking, innovation, and collaboration among students and academic communities. Monitoring trends and continuously adapting programs are key to the success and continued relevance of incubators.

This research offers several novel contributions to the literature on business incubators and student entrepreneurship. First, it provides the first systematic qualitative analysis of student business incubators in Croatia, mapping their objectives, practices, and outcomes. Second, the study moves beyond general assessments of incubator services by identifying concrete success factors that distinguish more effective incubators from less successful ones, notably a five-stage support model: opportunity identification, idea shaping, prototyping, investor attraction, and market launch. Third, the research highlights alternative incubator goals, such as project-based learning and employability enhancement without firm creation, adding nuance to understandings of incubator performance in educational settings. Fourth, the findings provide new empirical insights into student-specific entrepreneurial barriers, showing how lack of business experience, decision-making insecurity, and limited perseverance influence outcomes. Croatian incubators actively address these barriers through mentoring, motivation strategies, academic incentives, and normalization of early-stage failure. Finally, the study illustrates how incubators act as intermediaries between academia and industry, emphasizing informal networks, close collaboration with business partners, and access to real-world technologies and projects.

A limitation of this study is the small number of respondents, which may result in findings reflecting primarily the views of the most active incubators and not being fully representative of the entire population. Future research should incorporate the perspectives of incubator users and evaluate service quality. Recent research has confirmed a statistically significant relationship between planned behavior and future entrepreneurial behavior among female students, with university business incubators playing a moderating role (Alkhaldeh, 2025). Future studies could attempt to replicate these findings in the context of Croatia. Comparative research designs incorporating harmonized quantitative measures—such as venture survival rates, employment creation, funding outcomes, and

graduate employability—alongside qualitative insights from incubator managers and users, could enable more robust cross-country comparisons while accounting for institutional, economic, and policy differences.

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E-mail: ikedmenec@foi.unizg.hrOrcid: <https://orcid.org/0000-0002-3190-6441>**POVEZIVANJE OBRAZOVANJA I PODUZETNIŠTVA:
ČIMBENICI USPJEHA STUDENTSKIH POSLOVNIH
INKUBATORA U HRVATSKOJ*****Sažetak***

Cilj je rada ispitati djelovanje studentskih poslovnih inkubatora koji imaju sve značajniju ulogu u poticanju poduzetništva, inovacija i suradnje između sveučilišta i industrije, osobito u nastajućim poduzetničkim ekosustavima poput hrvatskoga. Istraživanje je provedeno na temelju dubinskih intervjua s pet voditelja studentskih poslovnih inkubatora. U radu su identificirane dominantne usluge koje inkubatori pružaju, prepreke s kojima se suočavaju njihovi korisnici, ishodi rada inkubatora, različiti oblici suradnje s poslovnim sektorom i planovi za budućnost. Zaključuje se da najuspješniji inkubatori pružaju podršku u: (1) razvoju ideja; (2) izradi prototipa; (3) pronalasku investitora; (4) ulasku na tržište; i (5) prepoznavanju prilika temeljenih na potrebama poslovnog sektora. Rezultati će pomoći drugim studentskim poslovnim inkubatorima u provedbi usporedne analize i organizacijama koje planiraju osnivanje studentskog poslovnog inkubatora u primjeni identificiranih uspješnih praksi.

Ključne riječi: poduzetništvo, studentski poslovni inkubatori, Hrvatska, poduzetnička infrastruktura, sveučilište.

JEL klasifikacija: L26, I23, O31.