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Empirical Evidence on Business Incubators' Role in Strengthening Entrepreneurship – A Comparative Study Italy vs. Romania

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In this paper, the aim is to understand what are the operational objectives of the incubators from Italy and Romania and what indicators have been chosen to measure the efficiency of the services provided. In the analysis of the incubation process, we tried to detect the degree of involvement of the incubator in the most important phases of the incubation process and to qualify the time of the incubation process by analyzing the main reasons for leaving the start-up in the incubation cycle. Comparative findings of this cross-country research reveal how much the incubator takes an operational and pragmatic approach in its incubation programs and to understand the level of importance given to the definition of the service product, offering valuable insights to developing the models and scenarios defined in Business-Model-Canvas.

Keywords: business incubator, entrepreneurship, start-ups lifecycle, open innovation, cross-country studies

1. Introduction and theoretical background

This research seeks to explore the differences between the Italian and Romanian business incubators, in the quest to determine the enablers of entrepreneurial initiatives in these countries.

Business incubation has been widely discussed, in order to first provide an overview of its spread in recent decades; however, it is now necessary to make some clarifications and present some information about this process.

As we have seen, the process of incubating the business consists, in short, in setting up a new business reality in an operating space shared by many other startups, where they will be able to access various services for a period considered appropriate: or until when moving the business to a larger space or acknowledging the failure and closing it.

From an operational point of view, this activity is very complex, in accordance with the business incubation continuum principle (Allen and McCluskey, 1990) and it is possible to meet several classifications in the relevant literature and in the various specialized reports.

We have chosen to report below the three-phase classification, considered more efficient, which is based on the temporal differentiation of the services offered to startups (not all incubation structures are / should be active in each of the following phases). This approach

is the one proposed by the European Union in the document "Smart guide to innovation-based incubators" (2010).

- ✓ Pre-incubation: The first phase which includes activities designed to support the potential entrepreneur in developing a certain business idea, in order to increase his chances of moving to the next startup phase. In this phase there is always a preliminary evaluation procedure (idea assessment) of the ideas proposed by the startup candidates. In this context, the incubator should always evaluate from an economic gain perspective (Hackett and Dilts, 2004) to differentiate between applicants who cannot benefit from the services of the incubator, those who do not need it, and those who can benefit from it. incubator services.
- ✓ Incubation: A phase that extends over the medium term, which coincides with the actual start of the business activity on the market. This tends to take about three years, which is considered critical to see if the start-up has been successful and if it has a significant chance of becoming a mature business (Pauwels et al., 2016).
- ✓ Post-incubation: A phase aimed at companies that have reached a stage of maturity and are able to remain on the market on their own and therefore leave the reality of the incubator that hosted the start-up (Hillemane et al., 2019).

Regarding previous studies on the impact of incubators on strengthening entrepreneurial ecosystem, according to Meeder (1993), the success of an incubator should always be evaluated taking into account the fundamental objectives of its operating model. Consequently, in the literature analyzing the impact of incubation activity, as will be seen later, in most cases scientists tend to focus on precise measures.

A first study that proposes an overview of the success factors for the management of an incubator is that of Smilor (1987). The author focuses on 10 unique elements: on-site business expertise, access to financial resources, in-kind financial support, community support, entrepreneurial network, entrepreneurial education, perception of success, methods for selecting potential incubated topics, connections with universities and programs with well-defined policies. The experience gained by the incubator is the most relevant variable for the successful incubation of new businesses (Hackett and Dilts, 2004; Acharya, 2013).

The concept of "networked incubator" promoted by Hansen et al. (2000), is considered the most successful model compared to others, precisely because of its feature of promoting the development of networks between teams of different startups, allowing these new companies to quickly position themselves in an advantageous position in the market. Finally, both Bøllingtoft (2012) and Ebbers (2014) recognize the positive effects of networked contact development for companies in a business incubator.

2. Research methodology

We adopted a quantitative approach, based on a questionnaire shared among the largest possible sample of incubators from Italy and in Romania. In the initial planning of the data collection activity, we set out to proceed both "remotely" (e-mail, telephone, Internet call, etc.) and by scheduling real face-to-face meetings with incubator managers. In order to have the largest number of questionnaires and therefore an appropriate sample for our analyzes, it was essential to distribute the questionnaire across all IT channels (including the incubators' Facebook, Instagram and LinkedIn accounts). We have also scheduled meetings in incubators for "face-to-face" interviews with their managers / managers.

The intention to organize face-to-face visits and interviews was important for 2 reasons: to have a more general view of the activities and organization of the incubator (a view

which is unlikely to be obtained through online interviews or, even less so, by sending and receiving a completed questionnaire). In addition, the possibility to go into the details of each topic (of each question sent in our form) would have given us the opportunity to analyze each aspect much better and to qualify the answers appropriately, more than a simple option. selected from those proposed by the questionnaire. On the other hand, the in-depth face-to-face meetings would have given us the opportunity to assess other elements which, in our form, were not adequately taken into account.

Unfortunately, the COVID-19 pandemic and the restrictions imposed by the authorities (both the Romanian and especially the Italian ones) did not leave us many possibilities to organize face-to-face meetings and in very rare cases it was possible to organize them.

Once the answers to questionnaires were collected from the interviewed incubators, we entered the data from the Excel file prepared for data normalization and we prepared the functional structure for the pivot analysis. For data analysis we used 2 software: the main database was built in Excel and we performed all the detailed analyzes with the pivot chart technique. Subsequently, the database was imported into one of the software that provides general statistical analysis and, in our case, we used Gretl software.

Despite the restrictions and great difficulties generated by the pandemic, we were able to collect data from 74 Italian incubators and 55 Romanian incubators (Figure 1).

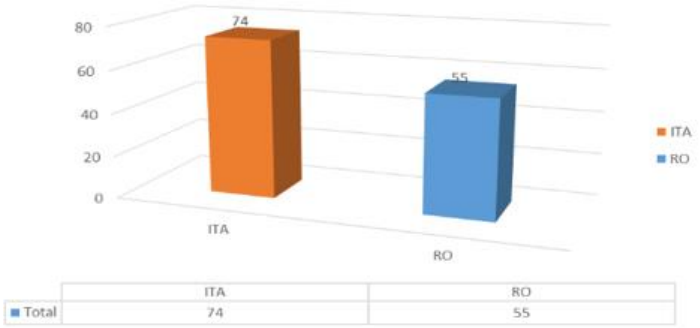

Figure 1 – Sample distribution in Italy and Romania

Source: authors' research

In the case of efficiency indicators, we assessed how the incubator / accelerator managers measure (or intends to measure) its efficiency in the following ways: by a numerical indicator that refers to the number of incubated companies; by the total number of employees of the incubated companies. This indicator is not only quantitative, as it attests to the incubator's commitment to generating jobs, through the economic consolidation of the company that generates jobs. We also considered the indicator of the economic result of the incubated start-ups, which highlights a responsibility of the incubator not only for the quality of the services, but also for the economic efficiency and of the scenario "moment of placing on the market" of the start-ups, the indicator of the patrimonial results of the start-ups, filing patents, presentation and finding funding applications from different sources.

As part of the survey on the institutional objectives of the incubator, we preferred to offer the interviewee the choice of the level of importance of each proposed objective. The assumption of this approach is related to the fact that the 6 objectives are, historically, all born of the nature of an incubator and a simple yes or no would have been very helpful (and we would probably have gathered all the affirmative answers). We found it much more useful to

let the interlocutor reflect not on the low importance of a goal, but on the level of interest he receives in relation to all the others. For this reason, the interlocutor gave a vote of one to 5 for each proposed objective, in particular: job creation for sustainable development in the reference territory; support for industrial development and growth through new innovative start-ups; creating international partnerships by supporting innovative start-ups in strategic sectors with high growth and / or market potential; support for innovation and open-innovation strategies

In the incubation process, we focused on the following issues: the degree of involvement of the incubator in the initial phase: feasibility study, structuring the idea and monitoring/reviewing the business plan. Assuming this is a natural element of the incubator, we tried to give a value to the number of involvements, which is the level of importance that the incubator assigns to each of these areas. In particular, we are interested in understanding how active the incubator is at the beginning and how it participates in the idea of the business plan. Although not explicitly stated, this question allows us to understand how much the incubator complies with lean-start-up principles and, in particular, how much the incubator pays attention (and/or has specific skills) to the Business-Canvas model.

As part of the selection process, we wanted to collect information both on the methodologies for collecting business ideas and (above all) on the elements that are taken into account when evaluating business ideas for the inclusion of start-ups. ups in the incubation process.

We investigated the degree of involvement of the incubator in the launch phase of the Start-up: implementation of the business plan and definition of the characteristics of the product/service, as well as the degree of involvement of the incubator in the Execution phase: Development, testing and implementation of the product and / or service.
What is the degree of involvement of the incubator in the support phase for commercial development: search for a business partner, sales channels, promotion and commercial communication etc.

The last part of the questionnaire aims to collect data that allow us to configure the obstacles/risks that prevent and have prevented the incubation program (and incubated start-ups) from achieving their objectives. Two insights were explored: the factors that most hinder the growth of incubated companies and the weight of incubated companies that ceased their activity during or at the end of the incubation period (average of the last 5 years).

3. Findings

The first insight outlines the organizational structure of the incubators in relation to the staff employed. As can be clearly seen from Table 1, there is a contrast between the Romanian and Italian contexts.

Table 1 - Organizational structure of the incubators in terms of employees

Number of employees in the incubator	Italy	Romania
Between 1 and 3	1.36%	32.73%
Between 4 and 10	33.78%	40%
More than 10	64.86%	27.27%

Source: authors' research

Assuming that the data refer to permanently employed staff, beyond temporary collaborations (often related to projects to be implemented), most Romanian incubators are

positioned in the medium-low segment, in terms of the number of permanently employed and diametrically opposed to the Italian situation. Most Italian incubators, approximately 64.86%, have 10 or more permanent employees in their own structure, while Romanian incubators that are positioned on the same segment are 27.27%.

Furthermore, we have addressed performance indicators to Italian and Romanian representatives of incubators. We haven't asked interviewees if their interests were oriented towards an objective or not, but if they evaluated, with some indicators, their organizational process with reference to each of them. In other words, our intention is to observe, beyond vision and mission, whether there is a real intention to improve the incubator and whether, in relation to this, the incubator observes some aspects that it considers essential to evaluate its own performance and define improvement strategies.

Table 3 - Economic indicators and institutional objectives of incubators

Economic indicators and institutional objectives of incubators	Italy	Romania
Economic KPIs of the incubated companies	84%	76%
Number of incubated companies	57%	71%
Funding obtained by incubated companies	62%	64%
Number of employees in the incubated companies	35%	60%
Brevets reported by incubated companies	58%	51%
Financial results of incubated companies	30%	55%

Source: authors' research

Comparing the results from Table 3, there are no significant differences, only a greater attention to economic indicators (84% for Italian incubators compared to 76% of Romanian incubators) and less attention to indicators referring to staff employed in start-ups (35% for Italian incubators against 60% for Romanian incubators). The latter seems to be the aspect that distinguishes between the 2 contexts, namely the greater attention of Romanian incubators on employment generated by start-ups and incubation programs.

We assessed the communication activity with the different types of nature of the incubator to understand if there was a greater inclination in quantitative (intensity of initiatives) and qualitative (type of communication) by one type of incubator compared to the others, as well as in each from the 2 national contexts. In the Italian context, incubators prefer a higher frequency of communication initiatives and only 17.50% of private incubators carry out an annual activity, while all the others (besides the rest of the private incubators) focus on monthly activities and in coordinating communication with other events. Also, regarding the Romanian context, there is a good concentration of communication activities (organized individually or coordinated with other events), although, in this case, there is no special attention to the organization of events specific to the incubator. On average, only 17% of incubators have a regular / monthly plan of specific communication activities and most plan communication for other events. From the perspective of the nature of incubators (public, private and mixed), it is obvious the different approach to communication by public incubators. While in Italy 83.33% of public incubators have monthly communication activities (which reach 100% if added to those held at other events), in Romania only 17.39% of public incubators have monthly communication activities (which reach 52% if added to those made at other events).

Open innovation is an important element, not only in terms of preparing the economic system for the dynamics of competitive and sustainable development, but also in relation to the quality of results that an incubator can obtain from programs. its incubation. From this perspective, the quality of incubation programs is also measured by the quality of innovation contained in the products / services that start-ups would like to offer and how they relate to both the needs of companies and research results. Succeeding in implementing, in a real and concrete way, the principles of Open Innovation mean linking the start-up with elements of enormous value that can improve the success rate and consolidation on the market. Although 25.45% of the Romanian incubators stated that they do not have their own strategy regarding Open Innovation, 47.27% state that they manage this aspect and 27.27% have a plan to implement it, not different from what happens in the context Italian incubators. Beyond the aggregate data (which is very encouraging), we tried to analyze the quality of the results obtained by this approach. For this reason, we correlated the data on Open Innovation management with other elements of the survey, primarily with data on the trend of the quality of business ideas. The incubators that have registered a decrease in incubation requests from start-ups are precisely those that do not intend to adopt operational plans for open innovation management: 75.00% in the Romanian context and 60.00% in the Italian context.

Regarding the "input" selection of start-ups for their inclusion in incubation programs, the three main options are considered:

- the specific call defining and highlighting, from time to time, the characteristics of start-ups for entering the incubator, indicating all the specific requirements that candidates must present and demonstrate in order to be included in the incubation program;
- direct application and often made through the front office which sets up a meeting between the candidate and the contact person of the incubator. In this case, it is based on the experience of the expert, and the evaluation is much more discretionary than that made by a specific call;
- a hybrid form that integrates the answer to a call and the direct application, modulated in different ways at the discretion of the incubator and its specific operating methods.

From the data collected, Romanian incubators operate mainly with specific calls (43.64%) and direct applications "front-office" (45.45%), while Italian incubators operate mainly with integrated and modulated forms between specific calls and direct selection (43.24%). In the Romanian context, most incubators are between 20-50 incubation applications, while in Italy, most incubators seem to stimulate more business ideas and only 6.76% of incubators say they have received less than 20 requests.

Regarding the selection of start-ups to be included in the incubation programs, we tried to understand which of them have priority over the others, comparing the context Romanian and Italian, taking into account the aggregate values resulting from a 5 points Likert scale in which each incubator assigned to a principle/parameter. We observed that the Romanian incubators use, on average, the alignment of the proposed business with the field of interest of the incubator and the potential of the business idea as the first selection parameter. In the Italian scenario, the first criterion for selecting the start-up refers to the potential of the business idea (as it happens in the Romanian context) followed, however, by the characteristics of the entrepreneurial team that proposes it. At a glance, results are different on the 2 contexts:

- Romanian incubators: the focus is on analyzing the potential of the business idea, which should be correlated with the experience and objectives pursued by the incubator (in terms of supply chain, development vision, etc.);
- Italian incubators, in addition to the potential expressed by the business idea, during the selection, try to detect the characteristics (in terms of previous skills, abilities and experiences) of the proposers or the entrepreneurial team.

Table 4 reflects the cross-country differences in what concern the selection procedures of the incubated companies.

Table 4 – Incubation process selection: Italy vs. Romania

Degree of importance for selecting the incubated start-ups	Italy	Romania
The potential of business idea	91.62%	81.82%
Business plan quality	70%	71.64%
Entrepreneurial team strengths	91.62%	77.82%
Available venture capital	58.11%	58.55%
Business focus in relation with incubator mission	72.9%	82.18%
Technology readiness level	84.32%	66.18%
Origin of technological transfer process (academic institution or others)	77.03%	66.09%

Source: authors' research

In the Romanian context, the highest percentage of services provided with staff and own resources is the one referred to the Administrative Services for start-ups (93%), followed by the tutoring and mentoring service (69%) and the services related to facilities (69%). In the Italian context, incubators, with their own organization, mainly offer tutoring and mentoring services (97%), facilities-related services (93%) and training for entrepreneurial skills (93%). Beyond the higher percentages observed in the Italian context, we can see that Romanian incubators focus on the subjective needs of start-ups (tutoring and mentoring) and on aspects of management support (administrative services) and logistical support (facilities). Italian incubators pay more attention to subjective aspects and focus their resources more on reducing gaps in entrepreneurial skills and abilities and 97% and 93% of incubators are organized to provide mentoring / mentoring services and training services for the development of entrepreneurial skills, offering at the same time a good level of logistical assistance with facilities.

From the data collected and analyzed, it is clear that Romanian incubators give priority to the initial phase of business planning, including feasibility study, design of production processes / supply of goods / services and market analysis. When we move on to the next and operational stages, the degree of involvement of the incubator decreases and we notice that:

- moving to the implementation phase of the business plan, the importance of the incubator's involvement is high only in 58% of cases (compared to 64% of the high involvement in the business plan definition);
- moving to the research and collection phase of financial resources, the involvement of the incubator is high in only 49% of cases;
- moving to the commercial development phase, the involvement of the incubator is high in only 47% of cases.

Italian incubators also show the same trend as Romanian incubators, with very high attention in the preliminary planning phase and relatively little attention (on average) in the subsequent phase of prototyping / industrialization of the product / service (only 39% of incubators states that they pay close attention to this incubation phase of the start-up).

4. Conclusions

In this research, we analyzed, in a comparative way (Romania / Italy), the following areas: the characteristics of the sample of Italian and Romanian incubators, the birth trend of incubators / accelerators, also in a comparative way Italy / Romania, trying to understand when they incubators were set up more also with reference to their size, composition analysis, analysis of profit and non-profit incubator characteristics, analysis of relations between incubators and universities / research centers, analysis of economic relations between incubators and start-ups incubators, analysis of the structure of incubator costs, analysis of the trend of incubator management costs and their impact on the organization, analysis of the organization's funding sources and incubation programs, incidence of costs for incubation programs, analysis of organizational processes of incubators, analysis of institutional objectives and other incubator relations, analysis of incubator relations with the economic system, strategy and operational management of Open Innovation, analysis of the selection process of start-ups for incubation programs, analysis of the principles of selection of start-ups for inclusion in incubation programs , the analysis of the supply chain coordination / technology strategies of the incubators, the analysis of the services offered to the start-ups in the incubation programs and the analysis of the incubation process.
with regard to incubators that benefit from economic results, it is essential that Romanian incubators better assess the potential of the business idea and the team that proposes it (subjective and subjective context attributed to the genetics of start-ups), insofar as the business idea is aligned with the objectives of the incubators (Economic System). Exactly the same, albeit with a greater emphasis, is the position of Italian incubators that benefit from the economic results of incubated start-ups.

Regarding the incubators that do not benefit from the economic results of the incubated start-ups, in the Romanian context it is preferred to select business ideas if they are aligned with the objectives of the incubator and if the candidates have financial resources, while Italian incubators prefer to capitalize the potential of the business idea, on the level of technology contained in the proposals (especially if it transfers technology from universities and research centers) and on linking the business idea to European or national funding programs. From this perspective we can summarize the fact that Romanian incubators that do not benefit from economic results tend to position themselves more within the economic system, while Italian ones observe more the genetics of start-ups and the Open Innovation scenario.

The main limitation consists of the convenience sample used in this research, selected for increasing the respondents' number, considering the huge amount of time needed from the part of interviewees and the restrictions imposed by COVID-19 pandemic.

Future agenda will address a correlational study aiming to explore the associations between variables as criteria for selecting companies in the incubator, degree of involvement of the incubator in the seed phase, degree of acceptance of business ideas in the incubator, form of initiation of the selection process of companies for incubation, number of start-ups incubated in the last 5 year and maximum time for carrying out the activities of the companies in the incubator.

References

1. Acharya, M. (2013). The Journey through Idea, Innovation and Enterprise: Role of Technology Business Incubators–a Practitioner's Perspective.
2. Bøllingtoft, A. (2012). The bottom-up business incubator: Leverage to networking and cooperation practices in a self-generated, entrepreneurial-enabled environment. Technovation, 32(5), 304-315.
3. Ebbers, J. J. (2014). Networking behavior and contracting relationships among entrepreneurs in business incubators. Entrepreneurship Theory and Practice, 38(5), 1-23.
4. Hackett, S. M., & Dilts, D. M. (2004). A real options-driven theory of business incubation. The journal of technology transfer, 29(1), 41-54.
5. Hansen, M. T., Chesbrough, H. W., Nohria, N., & Sull, D. N. (2000). Networked incubators. Harvard business review, 78(5), 74-84.
6. Hillemane, B. S. M., Satyanarayana, K., & Chandrashekar, D. (2019). Technology business incubation for start-up generation: A literature review toward a conceptual framework. International Journal of Entrepreneurial Behavior & Research.
7. Meeder, R. A. (1993). Forging the incubator: how to design and implement a fesibility study for Business Incubation Programs. National Business Incubation Association.
8. Pauwels, C., Clarysse, B., Wright, M., & Van Hove, J. (2016). Understanding a new generation incubation model: The accelerator. Technovation, 50, 13-24.
9. Report on Smart guide to innovation-based incubators, https://ec.europa.eu/regional_policy/sources/docoffic/2007/working/innovation_incubator.pdf Accessed on 23 May 2021
10. Smilor, R. W. (1987). Managing the incubator system: critical success factors to accelerate new company development. IEEE transactions on Engineering Management, (3), 146-155.