

Emergence of university incubators in Algeria and their role in promoting university entrepreneurship: case of the incubator at the university of Bejaia.

ظهور الحاضنات الجامعية في الجزائر ودورها في تعزيز ريادة الأعمال الجامعية: حالة حاضنة جامعة بجاية

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Abstract:

This article aims to analyze the context of the setting up university incubators in Algeria and their contribution to the promotion of entrepreneurial spirit and innovation.

The study shows that since the establishment of incubators in all Algerian universities, followed by the promulgation of Decree n°1275 on "a diploma - a startup, a diploma - a patent of invention", an entrepreneurial atmosphere and an enthusiasm to undertake projects registered within the university community has been unprecedented, thanks to several innovative projects submitted within the support structures. The results of the survey of a sample of project leaders from the University of Bejaia have made it possible to identify seven dimensions of expectations which clearly show the needs and the difficulties which could constitute the orientations of the incubators in terms of services likely to meet the different expectations expressed by project leaders.

Key Words: incubator, startup, accompaniment, project, entrepreneurial spirit.

JEL Classification Codes : L26, O31, O38

ملخص:

يهدف هذا المقال إلى تحليل سياق إنشاء حاضنات جامعية في الجزائر ومساهمتها في تعزيز روح المبادرة والابتكار، تظهر الدراسة أنه منذ إنشاء الحاضنات في جميع الجامعات الجزائرية، تلاه صدور المرسوم رقم 1275 بشأن "شهادة شركة ناشئة، شهادة براءة اختراع"، جو ريادي وحماس للقيام بمشاريع داخل الجامعة لم يسبق له مثيل، وذلك بفضل تسجيل العديد من المشاريع المبتكرة المقدمة إلى الهيكل الداعمة. أتاحت نتائج دراسة عينة من رواد الاعمال من جامعة بجاية تحديد سبعة أبعاد للتوقعات توضح الاحتياجات والصعوبات التي يمكن أن تكون توجهات الحاضنات من حيث الخدمات التي من المحتمل أن تلبى التوقعات المختلفة التي عبر عنها الطلبة رواد الأعمال.

كلمات مفتاحية: حاضنة، شركة ناشئة، دعم، مشروع، روح ريادة الأعمال.

تصنيفات JEL: L26, O31, O38

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INTRODUCTION:

Several experiences around the world claim that entrepreneurship is a major lever in the economic development of countries. Its importance is undoubtedly related to the creation of new businesses, the renewal of the existing business fabric and job creation, but also as a source of innovation, considered nowadays, as an indicator of the performance and competitiveness of both companies and territories

This fact was observed since the 1990s when the Algerian public authorities have vironment for introduced conditions into public policy aimed at building a favourable en promoting entrepreneurship and innovation. Aware of the challenges related to the professional integration of young stuents, as well as the existing potential for innovation and to promote entrepreneurship in creativity that exists, the new policies also focus on the need the university environment. In addition to the facilities in terms of access to finance and tax benefits already available within the framework of assistance and support schemes for entrepreneurship, the major focus that has been highlighted in recent years relates to the need to inculcate an entrepreneurial spirit among students. In this respect, supporting the latter seems to be an essential step through training and monitoring programs, organization of competitions for the best innovative ideas, etc.

Increasing international competition, accentuated by the development of new technologies, has forced public authorities to get in tune with these developments. Their commitment in the diffusion of entrepreneurial spirit has been marked by the creation of a several support organizations for business creation and start-ups.

Due to the considerable growth experienced in recent years by support structures around the world and the decisive role they play in the development of entrepreneurship, the Algerian public authorities have become aware of these issues and the potential that exits in the university environment. In addition to training programs and research into entrepreneurship, Algerian universities are committed to organizing events (such as Global Entrepreneurship Week, conferences, challenges, training workshops, etc.) and working to set up new entrepreneurial support structures to develop the entrepreneurial spirit among students and promote entrepreneurship and innovation in the university environment.

We believe that looking at the role and importance of university incubators in promoting innovation and the creation of start-ups in the university environment is a relevant and topical debate. It allows us to highlight the contribution of these structures to the dissemination of the entrepreneurial spirit and initiative among students, the development of innovation, the creation of innovative start-ups, and the professional integration of students through job creation.

This is why we have been interested in this work to analyze the context of setting up university incubators, to analyze the challenges and perspectives of these structures. In this respect, we will attempt to highlight the different dimensions of expectations that these university incubators will face.

In this context, the aim of this study is to answer the following question : how do university incubators contribute to the promotion of the entrepreneurial spirit within the

university community (students)? What expectations do students with entrepreneurial projects have of these support structures?

The methodology adopted is based on an exploratory and descriptive qualitative study analyzing the context of the emergence of university incubators in Algeria, as well as on a case study involving a survey of a sample of students carrying out projects within the incubator at the University of Bejaia.

1. Context of development of entrepreneurial support structures in universities

The development of entrepreneurship support incubators dates back to the 1950s in the United States and has since expanded to several other countries around the world. Several names were used to designate the accompanying structures: nurseries, incubators, hives, etc. However, the first university incubators appeared in France in the late 80s, following a number of initiatives undertaken by the high schools. The aim of these initiatives is to transfer and market the results of scientific research to the business world.

Indeed, several authors speak of student incubators that first appeared in French engineering schools (Bernasconi & and authors, 2005). The EM Lyon engineering school in 1984 and the Ales mine school of engineering in 1985 are emblematic examples of the creation of incubators to support students, former graduates and even teacher-researchers.

Incubation and support began as a practice and a profession before it became a research area in which several academics have taken an interest in their research (Chabaud & and authors, 2010).

For (Allen & Rahman, 1985), support contributes to create a favorable context for entrepreneurship by providing a reassuring environment to project leaders, by offering them a number of services (premises, advice, etc.) and enabling them to be in contact with other entrepreneurs. This entrepreneurial support differs from other forms of support in terms of its recognized missions. For some, its main aim is to enable the entrepreneur identify and acquire resources (Albert, 1986) ; (Chrisman, 1999), and to transfer knowledge to the person being accompanied (Sammur, 2003).

2. The entrepreneur, actor of entrepreneurship

In the Schumpeterian tradition, talking about entrepreneurship or innovation inevitably brings to mind the entrepreneur at the heart of the entrepreneurial process, as the actor who creates and innovates. In Schumpeter's vision, the entrepreneur is seen as someone who innovates and develops new products, new markets, new production methods, new sources of raw materials and new forms of organization (Schumpeter, 1935).

However, through the act of entrepreneurship, the entrepreneur's success is based, on the one hand, on intrinsic factors related in particular to his skills and knowledge, which will be consolidated by his personal motivations and expectations, and on the other hand, it is also based on extrinsic factors linked to the environment and external conditions in which he carries out his activity.

According to (Arlotto & and authors, 2015), a company does not emerge ex nihilo and that the first phases of development are the most problematic. For these authors, creating sustainable, successful businesses requires providing the best possible support at the start of the creation process.

Setting up a business is a challenge for every project leader. Entrepreneurs follow a complex process, particularly when they are setting up an innovative business. Their aim is to create a company that can meet the needs of the market and society as a whole. This process is complex, because in addition to the usual obstacles of setting up a new business, there are also requirements related to the viability of the created company. These requirements are linked to the specificities of an increasingly complex external environment, particularly when it comes to an activity marked by an accelerated pace of innovation (instability of branches of activity linked to the rapid development of new technologies, market requirements, significant financing needs, the company's rapid entry into an international market where competition is fierce, etc.).

As a result, the major problem facing public institution lies not only in the increase in the number of companies created but also in setting up appropriate monitoring and support structures or mechanisms to ensure the survival and development of these newly created businesses.

3. Definition of startups or innovative companies

Referring to the Larousse dictionary, the term startup in English is not ambiguous “it means a start-up company (start) aiming for a certain growth (up). Its first use dates back to 1970 by the American economic press (Forbes, Business Week) to designate companies based on technical innovations in the field of electronics”.

The literature on innovative companies, start-ups and high-tech companies has been developed since the beginning of the 1990s. However, despite the many studies that have been carried out, there is still no consensus on these concepts. The word "startup" means "company just starting out" or "young company". A start-up is an innovative company focused on new technologies and strong market prospects. This type of business differs from existing legal forms of enterprise or company. It has a strong growth potential and a high enthusiasm for innovation by offering products or services that are unique on the market.

For (Ries, 2011, p. 127) a startup is defined as “a human institution with the mission to deliver a new product or service under conditions of extreme uncertainty.” This author in a book on startups, uses a concept of « lean startup » as a new approach that differs from traditional management. In addition to capital, his approach is based on human creativity and learning based on counter-intuitive practices to shorten product development cycles.

4. The incubator : what are we talking about ?

Since the phenomenon of incubation has become an academic research discipline, it is worth noting that a number of research projects have been carried out, producing a profusion of definitions by many authors that we have retained in the literature.

- For (Cooper, 1985), “the incubator is conceived as an organization or an environment that influences, upstream of the business creation process, the skills and motivations of the entrepreneur.” However, to support the start-up and survival of the new business, support may also be provided downstream of the creation.

- (Smilor & Gill, 1986), an incubator is a structure whose purpose is to create a synergy between several factors (talent, technology and knowledge) in order to develop entrepreneurial behaviours, accelerate the commercialization of technology and encourage the development of new businesses.”

According to (Messeghem, L'accompagnement entrepreneurial , 2021), talking about the incubator means talking about the entrepreneurial support defined as “a process organized by a third party, over a period of time, enabling a project leader (s) or entrepreneur(s) to benefit from a learning dynamic (training, advice, etc.), access to resources (financial, informational, etc.), networking, services and decision-making support (mentoring).

These are places where innovative start-ups are born, thanks to a range of favorable conditions essential to the success of all entrepreneurial projects (training, legal and administrative advice, financial support and coaching, access to various networks, accommodation, etc.).

4.1. The incubator, a support system but also a means of acquiring legitimacy

Entrepreneurial support is, as (Cuzin & Fayolle , 2004, p. 79) point out, " a business start-up assistance practice based on a relationship that is established over time and is not one-off, between an entrepreneur and an individual external to the creation project. Through this relationship, the entrepreneur will learn a great deal and will be able to access resources or develop skills that will be useful for the realization of his project ».

Entrepreneurship is a long, complicated and difficult process, especially for young people with little experience and few resources, whose business is evolving in an unstable environment. To bring their project to fruition, they face a number of constraints that can slow them down or discourage them. Indeed, in addition to the hostile environment in which the project owner will operate due to lack of financial resources, mastery of the necessary knowledge, legal and administrative constraints, etc., there are also constraints related to the lack of sufficient credibility (legitimacy) to access, whether financing and capital, or government aid, or even the market, etc.

According to (Chabaud & and authers, 2005, p. 11), they must gradually obtain trust, an image of reliability, reputation and finally institutional legitimacy by pursuing a strategy of legitimation, both cognitive and socio-political, at different successive levels: organizational, intra-organizational, inter-organizational and institutional.

Several other researchers see coaching as a means of legitimizing entrepreneurs (Chabaud & and authers, 2005) ; (Cullière, 2005); (Messeghem & Sammut , 2007). In this respect, (Studdard, 2006) has also pointed out that some companies would join support structures not because they need to acquire new knowledge, but to improve their reputation.

In a study carried out on the perceptions of project leaders on the Createch incubator, (Chabaud & and authers, 2005) note that for them, the incubator is considered as a means for their visibility by allowing them to create qualified contacts and increase their credibility (legitimacy) in relation to certain networks, as well as allowing them to obtain a label.

The registration of project idea holders in a support program (an incubator) allows the various funding and administrative bodies to be reassured about the conditions for setting

up and studying the project presented, in particular concerning its economic profitability and its viability, and thereby will enable project holders to gain legitimacy with these bodies.

This is why it is important to provide the necessary means and conditions to motivate and encourage them to persevere in the process of concretizing their project idea and succeed. Carrying out an economic study of the project, seeking the necessary funding and knowing how to manage it by mastering the legal and administrative aspects is not an easy task for a person who is not familiar with the business world. Hence the fundamental importance of accompanying measures as highlighted in the literature on their role in access to resources and knowledge (Albert, 1986) ; (Chrisman, 1999). These services are likely to meet the needs of the entrepreneurial project leader and to a large extent condition the success of the project.

4.2. The incubation process

It should be noted that “there is no universal incubation process. Each incubation structure has its own intervention logic and its own incubation process”. So, to understand how an incubator works, you just need to understand the incubation process (Masmoudi, 2007, p. 119).

The incubation of startup projects is based on a process involving three distinct stages (Masmoudi, 2007).

- **The pre-incubation phase** corresponds to the process prior to setting up a business. In particular, it involves raising awareness of the act of entrepreneurship, the reception and the support of incubates. During this phase, the evaluation of the innovation, the business plan, the development and modelling of the company and the training should be carried out ;
- **The incubation phase** is an important step in the business creation process. It is based on the entrepreneurial action characterized by the actual support of the project leader. Its activities include : business plan, business development and modelling, and training ;
- **The post incubation phase** : it comes after the creation of the company, through monitoring and hosting activities for the startups (companies) created during the start-up period. The purpose of this phase is to ensure the sustainability and development of the startups (companies) created and thus limit their failure. The objective of the post incubation being to supervise the initial results and to validate the development strategies of the hosted companies (Masmoudi, 2007, p. 117 and 135). This supervision concerns in particular innovation diagnostics, technology support, its commercialization and business development.

5. Entrepreneurial support in universities : a new profession that requires which skills

Insofar as the activity of entrepreneurial support is a complex mission for it to be able to increase the survival rate of the companies created, it requires a range of services and material resources and various knowledge for the project leader as well as a requirement in terms of multiple skills and knowledge.

Several research studies have highlighted the importance and effectiveness of support structures during the entrepreneurial process which is closely linked to the services and skills available they offer. However, the fact remains that the evaluation of this effectiveness based on different criteria is still unclear and lacks consensus. Several authors cited by

(OndouaBiwolé, 2019, p. 15) have developed different criteria. Some associate this effectiveness with internal and external factors (Hackett & Dilts, 2004). Others focus on the skills of micro-entrepreneurs as determinants of success (Chatterjee & Das, 2016). On the other hand, (Soetanto & Geenhuizen, 2005) and (Abdullah & Armanurah, 2005) agree that the dissemination of accompanying “good practices” explains the effectiveness of support structures.

In line with this vision, which is based on good practice on the part of the support provider, the success of the project holder depends to a large extent on the skills of the entrepreneurial support provider, as this is the condition for the success and effectiveness of both the support process and the support structure. The skills and success of micro-entrepreneurs are the result of the quality of the support they receive.

In this context, we will refer to the work of (Bakkali & and authers, 2010), the latter on the issue of the effectiveness of entrepreneurship support coaches propose a framework of competencies for the job of coaches that involves the mastery of several types of skills listed in a framework divided into two parts: the first group includes the set of generic skills that each coach must possess, and the second group highlights specific skills to be possessed according to the type of support structure. These authors list and categorize this reference framework of skills through the triptych that analyses competence according to: knowledge, know-how and interpersonal skills.

5.1. Knowledge

They refer to the mastery of knowledge in a specific field, such as knowledge of the specific features of SMEs and business creation, tools for setting up entrepreneurial projects such as the business model canvas, the business plan, knowledge of certain aspects of business management (marketing, tax and finance, law, etc.), as well as knowledge of the main characteristics of different business sectors (Verzat & Chrystelle, 2009).

5.2. Know-how

They constitute the second category of this reference system which indicate the ability or the aptitude of the accompanying person to transfer his knowledge to the project leader considered as the first essential know-how for the job of the accompanying person (Sammut, 2003). In other words, the know-how transferred from the coach to the supported person is reflected in the latter's ability to become autonomous in solving future problems.

5.3. Skills

For (Bakkali & and authers, 2010) this category of competence depends on the deep characteristics of the individual. These authors mention that the possession of a know-how requires the accompanying person to have, on the one hand, a social awareness by having an open mind and empathy and the involvement of the accompanying person in his/her mission as facilitating factors of the relationship between the two parties, and on the other hand, having a social skill allowing to have good quality and stable relationships, the respect which allows the confidence of the accompanied, the psychological support to overcome the difficulties and the pedagogy that permits the easy transmission of knowledge.

While the generic skills mentioned above are the basic requirements common to all types of organization and form the basis of all support activities, there are also specific skills that are required according to the particular characteristics of each type of support structure.

Several authors suggest to distinguish these specific skills according to the type and nature of the incubator studied. They identify five types of incubators : economic development incubator (territorial skills), social incubator (skills related to the social and solidarity economy), business incubator (entrepreneurial skills), private investment incubator (financial skills) and finally academic and scientific incubator (technological skills) (Bakkali & and authers, 2010).

6. The different dimensions of student entrepreneurs expectations of university incubators

Research in entrepreneurship highlights three types of needs of entrepreneurs with regard to incubators (Cuzin & Fayolle , 2004). These authors have emphasized the importance of the notion of a dynamic adequacy between assistance needs and a range of services offered within a support system (Cuzin & Fayolle , 2004, p. 85) and also note that these needs require support profiles that are sufficiently appropriate to respond effectively to the type of need encountered.

The type of support provided to these project leaders is influenced by the nature of their needs. These authors mention three forms of support in relation to these needs :

6.1 Psychological Expectation

These needs relate more to the individual's need to manage his doubts or his excess or lack of confidence, or his need for training or information. In this case, the support will be psychological and should be provided by individual coaching ;

6.2. Technical expectation

This category of needs relates specifically to the project's financial, legal, economic, commercial and other requirements. In this case, the support work will take a more technical approach and falls within the field of specialist technical skills or expertise relating to the areas of these needs.

6.3. The expectation of individual/project suitability

These needs are those related to the search for adequacy between the individual and his project in order to ensure the relevance and coherence of the choices and strategic orientations. Support requirements seem to be moving towards more global, even methodological support. The coach's objective will therefore be to make entrepreneurs aware of the impact of their choices.

According to (Cuzin & Fayolle , 2004), each project creates a unique composition between the psychological needs based on the individual, the technical needs oriented on the project and the methodological needs oriented on the individual/project couple. In this sense,

the needs can be both multiple and diversified as the projects submitted for support in an incubator are numerous.

In addition, we can identify several other dimensions of expectations in the literature.

6.4. An expectation of legitimacy

In their work, several authors have highlighted a new potential expectation (need) of entrepreneurs : the search for legitimacy (Douglas & Hargadon, 2001) ; (Chabaud & and authers, 2005). The entrepreneur needs to incorporate his innovative project into society's knowledge so that society becomes familiar with it, thereby generating legitimacy and acceptance towards this innovation. Indeed, (Chabaud & and authers, 2005) emphasize the importance of this legitimacy and the role played by an incubator in disseminating and creating visibility around the incubate.

Projects that have benefited from support within incubators increase their legitimacy and acceptance, and can be considered a guarantee of seriousness and economic viability, particularly towards funding organizations (Bergek & Norman, 2008).

6.5. The expectation of finding material resources

Some authors mention that the main expectation entrepreneurs have of an incubator is to find infrastructure and material resources such as photocopying, meeting rooms and workspace, etc., (Arlotte & and authers, 2012). For example, (Chabaud, Ehlinger , & Perret , 2004) note that the provision of accommodation space for project promoters is considered as a vital service for incubates lacking resources. The sharing of the same accommodation space by several project leaders promotes the fertilization of ideas, the development of synergies, the creation of networks, the reduction of feelings of isolation, etc.

6.6. Expecting to break the feeling of isolation

Another expectation observed by in a survey of project sponsors was a decrease in the sense of isolation. Indeed, in so far as support structures provide project promoters with serenity and a sense of hindsight, the latter no longer feel isolated and alone in the face of their projects but they are well assisted and advised by qualified and professional support staff (Granger, 2000).

6.7. Expectation to seek social capital (networking)

For (Delanoe-Gueguen, 2015) another issue related to student-entrepreneurs is in social capital and access to resources. By “social capital”, the author refers to the ability of project members to raise awareness in their network in order to obtain the necessary resources or knowledge not available within the group to succeed in the business creation project.

However, based on the low level of social capital among student entrepreneurs, the author identifies two new expectations of support structures : the need to expand the social network (known as networking) and connecting with professionals.

Furthermore, although incubators play an important role in supporting project leaders, the fact remains that they can face obstacles likely to limit their roles as well as their effectiveness (Hayat & Sid, 2016), the authors highlighted the total non-availability of the means and resources they need in their support profession (material means, financial

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resources, access to aid and financing organizations, etc.), the total non-satisfaction of the expectations of project leaders from the incubator (easy access of project leaders to the various administrative and banking organizations which is linked to the quality of the incubators' relationships with the latter, the divergence of the objectives of the project leader with those of the incubators, etc.).

Another study on incubators as a strategy for promoting economic projects concludes that the added value of incubators for supported entrepreneurial projects lies in the quality of the help and support services provided. The author, as part of his study, recommends expanding the services offered by the incubator for the benefit of project leaders, particularly in terms of financial aid and guarantees from financing organizations, and also the technological support (Bilal & Djaber, 2023).

7. Genesis of incubators in Algeria

The transition of the Algerian economy from a planned economy to a market economy has engaged the Algerian authorities in a major project of reforms and the establishment of structures and organizations capable of carrying out these changes (investment code, law on currency and credit, creation of several bodies to support the creation of private businesses, creation of a ministry dedicated to SMEs, creation of a delegated ministry dedicated to start-ups, etc.). Thus, having become aware of the accelerated pace of development of new technologies and innovation throughout the world, which is considered, nowadays, as a pivotal criterion for measuring the performance of companies and territories (countries), the Algerian authorities have introduced several measures and have set up various structures to prepare for these new requirements of the world economy and international competition.

Indeed, aware of the enormous delay experienced by Algeria in terms of information and communication technologies as well as the multiple requirements both internal and external to the country, the reform of public administration by the introduction of digitization (ICT) is the first reform to have caught the government's attention as a sector likely to have a knock-on effect on the entire economy and society.

Thus, as part of the E-Algeria strategy, a national strategy for the development and promotion of technology parks has been put in place with the aim of supporting this desire to make a transition to a digital society.

In this context, several incubators as spaces for fertilizing innovative ideas and creating start-ups have emerged across the country.

Sidi Abdellah's cyber park (2010) is one of the first incubators created as a space to host and promote the creation of ICT startups, with the aim of preparing Algerian society for digital technologies. In 2012, a second incubator was created in Ouargla, and 2013 was marked by the creation of two incubators : the « Technobridge » incubator of the Oran National Institute of Telecommunications and the incubator of the University of Batna. These ICT incubators are led by the National Agency for the Development of Technology Parks (ANPT) to encourage innovative project promoters to create start-ups in the field of ICT

while providing them with adequate support until the realization of their project or even offer them a place of accommodation.

7.1. Development context of university incubators in Algeria : what are the challenges?

Research has shown that the promotion of entrepreneurship is closely linked to the effectiveness of public policies on the promotion of entrepreneurship training, the support of the entrepreneurial process, the establishment of a flexible legal and administrative framework to stimulate entrepreneurial dynamics, access to finance, technology through innovation, etc.

We have noted that the appearance of incubators in Algeria is not very old and even less so in the university environment.

Indeed, in order to fight against the phenomenon of unemployment and to promote the employability of new graduates, several actions and measures have been undertaken by several universities at the national level, and this, to allow these new graduates to acquire the knowledge and skills necessary to find a job (support employability) or to create their own job (stimulate the entrepreneurial spirit). In addition to actions and events aimed at raising awareness within the university community of the challenges of entrepreneurship and its role in socio-economic development, the introduction of entrepreneurship into university training programs is one of the key measures aimed at opening up students' minds to entrepreneurship by encouraging them to take initiatives and undertake more autonomous actions in order to concretize their ideas/projects and create their own jobs.

This new direction for Algerian universities has been consolidated by a number of measures encouraging them to set up entrepreneurship centers, incubation spaces to stimulate the entrepreneurial spirit, and support for business start-ups. The creation of an "innovative project label" and a "start-up label", and more recently Ministerial Order 1275 of September 27th, 2022 on the "one diploma... one start-up" or "one diploma... one invention patent" mechanism, in application of the commitment of the President of the Republic to make the Algerian university a center of local, national and international social and civic influence, through which the Minister called for students to be directed towards university incubators to concretize their ideas and projects into reality.

These university incubators are part of a national dynamic that aims at developing entrepreneurial spirit and innovation in universities. It is within this context that several actions have already been initiated by the organization of several trainings and workshops and challenges designed to help students develop a spirit of initiative and to undertake actions.

In addition to all the aid and support measures through the creation of start-up financing funds, tax advantages, financial aid, etc., support for this entrepreneurship has become a major concern for public authorities in recent years, passing from the creation of a few public or private (university) incubators only at the national level to currently multiplying their number by the creation at the level of each university at the national level of an incubator intended to support students wishing to enroll in an entrepreneurial process and create their own startup.

7.2. Generalization of university incubators: a new political choice in the promotion of university entrepreneurship in Algeria

In order to make up for the accumulated delay in the development of start-ups and the use of ICT as the central objective of the E-Algeria strategy initiated in 2013, the number of incubators created at the national level has known, over the past two years, an unprecedented increase from only 15 incubators at the early 2010s to 91 incubators in 2023 created only at the level of the country's universities. The aim of increasing their number is not only to improve the level of training and learning in entrepreneurship for students, but also to instill a spirit of entrepreneurship and innovation within the university community and raise the level of employability among students.

As a result of this new direction and the various programs implemented by the Algerian government to support and promote start-ups, the number of start-ups has increased significantly. In the space of a year, the number of start-ups has doubled, while the number of incubators has tripled. According to a statement by the Director General of the Department of Start-ups and Support Structures at the Ministry responsible for the knowledge economy and start-ups, since the beginning of 2021, 751 companies out of 3,516 applications have been awarded the start-up label (Algeria: more than 750 "labelled" start-ups, 2022).

According to the same source, by the beginning of 2023 his department had registered more than 5,000 start-ups, 1,100 of which had been awarded the "Start-up" or "Innovative Project" label, emphasizing the role and importance played by incubators, the number of which increased between 2020 and 2023 by 91 new university incubators, as well as the financial aid allocated by the national start-up financing fund, which reached 58 billion dinars

8. Entrepreneurial orientation in the university environment: ministerial decree n°1275

In line with the actions and guidelines of the public authorities to create an entrepreneurial ecosystem conducive to the promotion of start-ups and innovation, particularly in universities, Ministerial Decree no. 1275 was promulgated on 27-09-2022 on "one diploma, one start-up" and "one diploma, one patent" to consolidate the efforts made in terms of policy to promote entrepreneurship in universities and the desire to reduce the unemployment rate affecting this category of the population in particular. This decree aims to encourage students at the end of their cycle to turn their dissertations into a start-up project or an invention patent while guiding them during the entrepreneurial process aimed at the concretization of their projects into marketable products or services or patents inventions.

As part of the implementation of this system, it seemed essential to us, on the one hand, to standardize at the national level the support tools and methods and to adapt international programs to the Algerian national context. On the other hand, the creation of a nucleus of trainers becomes an absolute necessity that will network on a national scale to train other trainers in order to reach a critical mass capable of supporting the flow of student's project leaders (up to 1,000 trainers) in the medium and long term, the number of which will certainly increase.

During the first few years of the application of decree 1275 and the creation of incubators at the level of each university, the number of applicants could be more or less low compared to the existing potential, but after a few years of operation this number is likely to evolve according to the objectives of the public authorities (see table 1).

Table (1) : Summary of projects registered under Order 1275

Universities	Number of Projects registered startups / invention patent
University of El oued	341 projects
University of Souk-Ahras	26 projects
University of Oued Souf	100 projects
University of Oum El Bouagui	190 innovative projects and start-ups, of which 160 were selected
University of Annaba	420 innovative ideas have been accepted and a further 120 are being submitted for review.
University of Guelma	111 innovative projects
University of Ouargla	500 innovative projects and 11 spin-off projects
University of Bejaia	06 projects
University of Msila	200 innovative projects supported and 135 patents filed between 2020 and 2023, including 93 patents in 2023
University of Alger ³	890 projects
University of Blida	60 projects
University of Tlemcen	390 projects
University of Biskra	348 projects
University of Medea	300 projects
University of Blida ²	290 projects
University of Sidi Bel Abbass	200 projects

Sources: established by ourselves from available statistics communicated by the Ministry of Higher Education and Scientific Research and the Ministry of Startups (March 2023).

The study of available statistics on innovative entrepreneurial projects at the level of university incubators mentioned in the table above and the analysis of the institutional context of the Algerian entrepreneurial ecosystem clearly shows the impact and the effect on motivation induced on students by the establishment of incubators within Algerian universities as well as the promulgation of the ministerial decree 1275 on the orientation of students towards “a diploma-a startup”, “a diploma-a patent of invention” in promoting their entrepreneurial spirit. Although the initial assessment of the results of this decree for a relatively positive start given the large number of projects registered in certain national universities, nevertheless, these results only indicate the number of project ideas or startup projects submitted for incubation and not actual creations.

In this regard, the promotion of entrepreneurial support activity (incubators) in the university environment, through the adoption of an organization of the whole system by promoting the potential of the existing range of services and advantages, both internally at the university (advice, training and coaching, organization of challenges and ideas competitions, use of laboratory equipment for free, etc.), and externally through its support structures (agreement with funding and support organizations for business creation, access to

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various tax benefits and project funding, etc.) remains the sine qua non condition for increasing the number of projects and successfully implementing them in the field and establish an entrepreneurial spirit and atmosphere conducive to the real emergence of a new generation of student-entrepreneurs.

9. Analysis of the results of the case study of the University of Bejaia incubator

In order to better understand the importance and the role that university incubators should play in promoting entrepreneurship among students, we have chosen to study the different dimensions of expectations with a sample of 70 students with project ideas or startup creation projects registered under decree no. 1275.

By analyzing the different dimensions of expectations, we can gain a better understanding of the major concerns that project leaders (student-entrepreneurs) have of the incubator, so that it is able to meet these expectations and succeed in bringing these projects to fruition in real innovative start-ups.

9.1. Characteristics of the studied sample of students with entrepreneurial projects

Table (2): characteristics of the studied sample

Field/Stream	Number
Computer science	18
Sciences and technology	15
Architecture	06
Biology and food sciences	09
Medicine	01
Economics, business and management sciences	16
Humanities, social sciences and language	05
Total	70

Source: field survey data, February 2023.

The sample consists of 70 project promoters from seven streams or fields. The students involved in this survey are all enrolled at the end of the master's cycle with the exception of the student in medicine, who is in his 7th year of studies.

The titles of their projects are almost all innovative themes that focus on renewable energy, responsible consumption and waste management and recovery, the creation of digital platforms and applications, etc.

Among the factors behind the majority of students (80%) choosing entrepreneurship is motivated by :

- The influence of awareness-raising and/or training sessions on entrepreneurship organized within the university, whether as part of Decree 1275 or previous projects ;
- The setting up of the incubator also represents a motivating factor which pushed these students to turn to entrepreneurship, considering it as a facilitator and multiplier of the chances of success in their projects ;

- Exploiting promising business opportunities on the market ;
- Seeking autonomy and independence by creating their own jobs ;
- Exploiting the skills acquired during their training.

9.2. Study and analysis of the different dimensions of expectations towards the incubator of the University of Bejaia

The study of data from the field survey of the project leaders involved shows well, through the answer to the question "What are the main expectations and/ or reasons that prompted you to join the incubator ?" the different dimensions of expectations already identified in the literature used and in several research studies that are grouped into seven dimensions :

- 1- Training offered by the incubator, learning, coaching and mentoring ;
- 2- To get out of isolation.
- 3- To gain legitimacy and credibility with external organizations ;
- 4- Ease of access to financing ;
- 5- Access to various networks of relationships with experts and the saving of expenses and costs of the services offered by the incubator ;
- 6- Needs in material resources, equipment and workspaces ;
- 7- Expectation of networking through access to the incubator's network (entrepreneurs, experts, financial institutions,).

9.2.1. Expectations dimension n°1 : learning, training and coaching

In terms of expectations, all of the project leaders interviewed (**100%**) expressed a need for learning, training, individual follow-up and coaching from the incubator's support team. Thus, through this opportunity to benefit from monitoring and supervision by a team of professionals, these project owners mention, on the one hand, that "it will be an interesting opportunity for us to submit our ideas and projects to a team of professional specialists who will enable us to take a critical look at certain aspects of our projects that we do not yet master". On the other hand, being aware of the low human capital (entrepreneurial skills) among students, the incubator represents for them a support structure allowing them to learn the necessary skills that an entrepreneur must have and the mastery of the key stages that must be followed during the entrepreneurial process.

Furthermore, we note that the awareness of the complexity of the entrepreneurial process, particularly for those who come from sectors other than management sciences and commercial sciences who have a little control over the company, the rest of the bearers of projects (**54 promoters**) have expressed the wish to be surrounded by experienced professionals before embarking on setting up their project and consider that meeting these expectations is essential in the success of the process of creating their startups.

9.2.2. Expectation dimension n°2 : Breaking out of isolation

Breaking down isolation is considered to be an optional expectation, that is to say, optional and not important, for the interviewed project leaders. However, we have noted that some of them, especially those who work alone (**20 students**) belonging to an incubator helps to limit the feeling of isolation. Meeting people and sharing the same spaces, as well as

participating in joint training, are factors that stimulate our motivation and determination to succeed in our projects.

However, the classification of this expectation according to its degree of priority (main, secondary and optional) showed that **40 project** leaders judged that this expectation is main, while **30** consider it among the secondary expectations.

Those who consider it as primary are convinced that credibility gives them access to a number of other services (financing, benefits, etc.), while the second category, which sees it as secondary, sees it as being built not only on the monitoring and benefit of the incubator's services but also on the relevance, profitability and ability of the idea or project itself to bring innovative solutions to the market

Additionally, we have nevertheless noted among some project leaders an apprehension of this legitimacy acquired within the student incubator, which tends to decrease as the project develops. That is to say, as soon as the project materializes, the project leader acquires more and more autonomy by developing his own business network and his membership in a student incubator can imply a project that is still in its infancy and is not yet mature enough to judge its profitability and economic viability.

9.2.3. Expectation dimension n°3 : expectation of access to funding

Having access to funding represents a real expectation of project promoters towards an incubator. Indeed, the main expectation of all (**or 100%**) of the interviewed project promoters lies in the need for training on the modalities of fund raising, on the search for relationships facilitating their fund raising and easy access to funding sources and advantages granted by public authorities for the realization of their projects.

9.2.4. Expectation dimension n°4 : search for networks of relationships with experts

The opinions expressed by project owners regarding this expectation are divided between those who consider the search for professional networks and various other networks of relations to be the main one (**60%**) and those who assume that this expectation is no less important (**40%**) but is not an absolute priority (main), and this is why it is classified as secondary or optional. This finding confirms what we had previously presented, who highlighted the fact that the need for technical expertise only becomes apparent to project owners once the project has reached a certain stage of development, and will become increasingly important when the project moves on to the implementation stage. Thus, for projects that are still at the idea maturation stage, the need for technical expertise may be expressed but with less intensity.

9.2.5. Expectation dimension n°5 : need for networking

Among the main expectations expressed by project owners is the expansion and consolidation of their network during the incubation process, but also post-incubation, because, according to them, a project that succeeds in materializing remains weak and in need of ongoing assistance for its take-off.

The results of the study clearly show that networking via the incubator was a primary expectation in the majority of cases, i.e., **60%** of interviewees, while **40%** interpreted it as a secondary expectation, given their already established network of personal contacts.

For these student entrepreneurs interviewed, given that the incubator has contacts with many organizations and actors of the local entrepreneurial eco-system, they believe that the search for networking allows them to share information, the creation of contacts with people as well as with external organizations that may be of particular interest to their project.

However, we have noticed that a certain category of project promoters (**20%**), particularly those who have a little mastery of their projects or their field, or who are well advanced in their entrepreneurial process, sometimes feel that the organization of events as part of a global networking program is not of interest to them, they pretend that they sometimes get lost. They express the desire to move towards direct and specific networking, where the meetings organized should focus on common issues, enabling project leaders to shorten the path.

9.2.6. Expectation dimension n°6 : Needs in terms of material resources

The need for material resources and workspace for project holders within the incubator depends on the nature of the project and activity and its requirements. Some activities require space, materials and equipment for start-up, while others are less demanding. During the analysis of the field data, this expectation is announced as the main expectation for half (i.e. **50%** of start-up entrepreneurs) due, on the one hand, to its requirements in terms of these resources, and on the other hand, the low allocation of financial resources to obtain adequate workspaces and the equipment necessary for the testing and prototyping processes of products. But this expectation is secondary or optional or even unexpressed by some project leaders whose nature of activity is not really demanding in terms of material resources.

However, the availability of professional workspaces, whatever the nature of the activity, provides a certain legitimacy and professional image of the project towards its partners.

Conclusion

This article, which aims to understand and analysis the context of setting up university incubators in Algeria and their roles in promoting the entrepreneurial spirit among students through the creation of startups and innovation, was marked by a noteworthy transformation of the Algerian university. Indeed, in the digital era and the current requirements for the country's competitiveness through innovation, economic development and job creation for the young student category, this development marked a transformation of the university's vocation from a model based on academic training to an entrepreneurial university by the development of new training and learning practices likely to develop the capacity of students to innovate and undertake ideas and start-up projects.

Although it is very premature to proceed with an evaluation of the results and the performance of the university incubators created, for the most part in the last three years, however we have been able to emphasize their role and the importance that they have played in the promotion of the entrepreneurial spirit through training in entrepreneurship and the creation of start-ups and innovation.

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Supporting students likely to bring project ideas to fruition would be an essential activity for strengthening their entrepreneurial skills and maturing their ideas.

The effectiveness of this new orientation of universities towards support should enable the emergence of new structures and spaces for exchanging experiences, exposing the various issues related to the support of project leaders in university environments, and pooling skills and resources, organize training for trainers and mentors, develop new support tools adapted to the Algerian context and to the context of each university, organize events at national level and create a degree of competition and emulation between incubators and Algerian universities to stimulate the creative and innovative spirit among students.

The results of our research reveal that since the establishment of incubators within all Algerian universities, the awareness-raising campaigns and the legal arsenal encouraging students to creativity, innovation and the creation of their own startup (decree 1275: startup diploma or invention patent) an atmosphere of competition and unprecedented enthusiasm was recorded within the university community, whether by the number of innovative ideas expressed or by the increasing number of innovative projects submitted within structures for the promotion of scientific research and support (incubators).

The field survey carried out among a sample of university project promoters in Bejaia enabled us to understand more clearly the different dimensions of their expectations towards the support structures that can be used as a lever for action, the latter allowing them to better guide the accompanying activities of university incubators to reinforce their role and importance in the success of projects led by student entrepreneurs.

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