

## BUSINESS REVIEW

THE ROLE OF THE UNIVERSITY BUSINESS INCUBATORS IN ACCOMPANYING AND SUPPORTING THE INNOVATIVE PROJECTS IN THE LIGHT OF DECREE 1275 – A PILOT STUDY FROM THE PERSPECTIVE OF GHARDAIA UNIVERSITY STUDENTS

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### **ABSTRACT**

**Objective:** This study aims at showing the role of the university business incubators in accompanying and supporting the innovative projects from the perspective of the students enrolled in the startups projects at the faculties of the University of Ghardaia in 2022-2023 in the light of the ministerial decree 1275.

**Theoretical Framework:** decree 1275 aims at motivating and accompanying the university students in establishing startups to increase the job opportunities and strengthen the local economy, as the youths shall learn planning for the professional and entrepreneurial futures instead of targeting governmental jobs.

**Method:** In this regard, we used an electronic questionnaire for data collection from a sample of 60 male and female students who had been chosen on purpose. In addition, we used the analytical descriptive method because it is the most suitable for the study.

**Results and Discussion:** Our findings show that the university business incubators have an important role in supporting and accompanying the innovative projects, and in the creative thinking and providing solutions. Besides, they can support the innovative projects in the light of the ministerial decree 1275.

**Research Implications:** The study recommends fostering the awareness about the role and advantages of the business incubators, and providing the financial support to the innovative students. Besides, it is necessary to provide the technical and counselling support from the industry and business experts..

**Originality/Value:** The significance and worth of this research are demonstrated by increasing awareness and focusing on the additional benefits that university business incubators may offer to beginning companies, as well as to the whole national economy.

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### O PAPEL DOS INCUBADORES DE NEGÓCIOS DA UNIVERSIDADE EM ACOMPANHAR E APOIAR OS PROJETOS INOVADORES À LUZ DO DECRETO 1275 – UM ESTUDO PILOTO A PARTIR DA PERSPECTIVA DE ESTUDANTES DA UNIVERSIDADE DE GHARDAIA

### **RESUMO**

**Objetivo:** Este estudo visa mostrar o papel dos incubadores de negócios universitários no acompanhamento e apoio aos projetos inovadores a partir da perspectiva dos alunos matriculados nos projetos de startups nas faculdades da Universidade de Ghardaia em 2022-2023 à luz do decreto ministerial 1275.

**Referencial Teórico:** o decreto 1275 visa motivar e acompanhar os estudantes universitários na criação de startups para aumentar as oportunidades de emprego e fortalecer a economia local, pois os jovens devem aprender a planear o futuro profissional e empresarial em vez de se concentrar em empregos governamentais.

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**Método:** A este respeito, utilizámos um questionário eletrônico para a recolha de dados de uma amostra de 60 estudantes do sexo masculino e feminino que tinham sido escolhidos intencionalmente. Além disso, usámos o método analítico descritivo porque é o mais adequado para o estudo.

**Resultados e Discussão:** Nossas descobertas mostram que os incubadores de negócios universitários têm um papel importante em apoiar e acompanhar os projetos inovadores, e no pensamento criativo e na oferta de soluções. Além disso, podem apoiar os projectos inovadores à luz do decreto ministerial 1275.

**Implicações da Pesquisa:** O estudo recomenda fomentar a conscientização sobre o papel e as vantagens das incubadoras de negócios, e fornecer o apoio financeiro aos estudantes inovadores. Além disso, é necessário fornecer o apoio técnico e consultivo dos especialistas da indústria e dos negócios.

**Originalidade/Valor:** O significado e o valor desta pesquisa são demonstrados pelo aumento da conscientização e foco nos benefícios adicionais que as incubadoras de negócios universitários podem oferecer às startups, bem como a toda a economia nacional.

**Palavras-chave:** Os Incubadores de Negócios Universitários, Projetos Inovadores, Decreto Ministerial 1275, Startups, Universidade de Ghardaia.

## EL PAPEL DE LOS INCUBADORES DE NEGOCIOS UNIVERSITARIOS EN EL ACOMPAÑAMIENTO Y APOYO DE LOS PROYECTOS INNOVADORES A LA LUZ DEL DECRETO 1275 – UN ESTUDIO PILOTO DESDE LA PERSPECTIVA DE LOS ESTUDIANTES DE LA UNIVERSIDAD DE GHARDAIA

#### **RESUMEN**

**Objetivo:** Este estudio tiene como objetivo mostrar el papel de los incubadores de negocios universitarios en el acompañamiento y apoyo de los proyectos innovadores desde la perspectiva de los estudiantes inscritos en los proyectos de startups en las facultades de la Universidad de Ghardaia en 2022-2023 a la luz del decreto ministerial 1275.

**Marco Teórico:** el decreto 1275 tiene por objeto motivar y acompañar a los estudiantes universitarios en la creación de nuevas empresas para aumentar las oportunidades de empleo y fortalecer la economía local, ya que los jóvenes aprenderán a planificar el futuro profesional y empresarial en lugar de dirigirse a empleos gubernamentales.

**Método:** En este sentido, utilizamos un cuestionario electrónico para recopilar datos de una muestra de 60 estudiantes masculinos y femeninos que habían sido seleccionados a propósito. Además, utilizamos el método descriptivo analítico porque es el más adecuado para el estudio.

**Resultados y Discusión:** Nuestros hallazgos muestran que los incubadores de negocios universitarios tienen un papel importante en el apoyo y acompañamiento de los proyectos innovadores, y en el pensamiento creativo y la prestación de soluciones. Además, pueden apoyar los proyectos innovadores a la luz del decreto ministerial 1275. **Implicaciones de la investigación:** El estudio recomienda fomentar la concienciación sobre el papel y las ventajas de las incubadoras de negocios, y proporcionar el apoyo financiero a los estudiantes innovadores. Además, es necesario proporcionar el apoyo técnico y de asesoramiento de la industria y los expertos de negocios.

**Originalidad/Valor:** La importancia y el valor de esta investigación se demuestra aumentando la conciencia y centrándose en los beneficios adicionales que las incubadoras de negocios universitarias pueden ofrecer a las empresas emprendedoras, así como a toda la economía nacional.

**Palabras clave:** Incubadoras Universitarias de Negocios, Proyectos Innovadores, Decreto Ministerial 1275, Startups, Universidad de Ghardaia.

### 1 INTRODUCTION

Today, the world is witnessing a huge development in the world of business and innovation, as the states make huge efforts to encourage the innovative youths to transform their new ideas into promising projects. In this regard, the university business incubators play a key role in supporting and empowering the inventors to achieve their ambitions, because the university, in its

comprehensive meaning, and its environment, are vital facilities that contribute to shaping and supporting the innovative projects, and to promoting the knowledge-based industry.

With the increasing focus on the technology and the innovative economy, fostering the creativity and excellence amid the students is vital. Therefore, the university business incubators emerged as a motivator of the students potentials to consolidate their abilities. These incubators make a secure and motivating environment that encourages the students to change their ideas into projects through providing the necessary professional resources, training, and counselling. Hence, the tight relation between the university and the various productive sectors through these incubators shows a high importance for the sustainable development since it develops the productive abilities and supports the universities and companies' competitiveness at the domestic and international levels. Moreover, it increases the technical abilities of the university human resources, supports the research structures, and fosters the financial resources.

### 1.1 PROBLEMATIC OF THE STUDY

Most of the studies that focus on the university business incubators insist on their paramount role in supporting the innovative projects of the students, contributing to the local sustainable development, and increasing the economic growth levels. Thus, the incubators are a mediator between the government, the financial companies, the economic partners, the factories, and the research centers, because they provide advisory, financial, training, technical, and marketing services to the entrepreneurial projects. In addition, they help the graduates translate their researches into startups.

Based on what was said, this study aims at showing the crucial role of the university business incubators in supporting and accompanying the innovative projects in the light of decree 1275 of 27 September 2022, which was issued by the Algerian Ministry of Higher Studies and Scientific Research to establish the biggest number of startups, patents, and middle-sized companies. In so doing, we raise the following problematic, "what is the role of the university business incubators in supporting and accompanying the innovative projects in the light of decree 1275 from the perspective of Ghardaia University students?"

From this question, sub-questions arise as follows:

1. is there a statistically significant relation at significance level 0.05 for the university business incubators in supporting and accompanying the innovative projects from the perspective of Ghardaia University students?

- 2. is there a statistically significant relation at significance level 0.05 for the university business incubators in fostering the creative thinking and providing solutions from the perspective of Ghardaia University students?
- 3. to what extent did the innovative projects succeed in the light of decree 1257from the perspective of Ghardaia University students?
- 4. are there statistically significant differences at significance level 0.05 between the students groups due to the variables of gender and educational level in evaluating the role of the university business incubators and in the success of the innovative projects?

### 1.2 STUDY HYPOTHESES

- 1. there is a statistically significant relation at significance level 0.05 for the university business incubators in supporting and accompanying the innovative projects from the perspective of Ghardaia University students;
- 2. there is a statistically significant relation at significance level 0.05 for the university business incubators in fostering the creative thinking and providing solutions from the perspective of Ghardaia University students;
- 3. the success of the innovative projects in the light of decree 1257depends on the tasks of the university business incubators from the perspective of Ghardaia University students.
- 4. there are statistically significant differences at significance level 0.05 between the students groups due to the variables of gender and educational level in evaluating the role of the university business incubators and in the success of the innovative projects.

### 1.3 IMPORTANCE OF THE STUDY

The importance of this topic lies within identifying and evaluating the role of the university business incubators in consolidating the innovation and initiative spirit for the students and in developing their projects. In addition, the incubators provide the necessary support to the students who want to found their projects in the light of decree 1275 issued by the Algerian Ministry of Higher Education and Scientific research.

### 1.4 AIMS OF THE STUDY

This study aims at:

- identifying and understanding the role of the university business incubators in accompanying and supporting the innovative projects;
- evaluating the effect of the university business incubators on strengthening the creative thinking and providing solutions to the students interested in the innovation;
- measuring the success of the innovative projects that are supported by theuniversity business incubators in the light of decree 1275;
- analyzing and understanding the factors that affect the success of the innovative projects and the role of the university business incubators;
- identifying the students groups according to the variables of gender and educational level in evaluating the role of the university business incubators and in the success of the innovative project.

#### 1.5 METHOD OF THE STUDY

We used the analytical descriptive method because it is the most suitable for our study.

### 2 LITERATURE REVIEW

Because our study tackles a modern topic in Algeria, we shall only discuss 05 studies that we believe strongly relate to ours:

a- The study of Ben Chikh (2020): It is a master dissertation entitled "the role of the business incubators in accompanying the small and middle-sized companies: case study of the companies in Biskra". It aimed at treating the small and middle-sized companies need for business incubators, and at knowing their reality in Algeria. In addition, the study aimed at providing a scientific and academic database to help the incubators provide the necessary support to the small businesses. The authors used the descriptive method to reach their goals, through making a report from the various economic literatures on the small and middle-sized companies and the business incubators. Furthermore, the authors used the analytical method to study the relation between the small and middle-sized companies support and the role of the business incubators.

Findings showed a big role for the incubators in promoting the national economy, as they widen and distribute the economic basis through investing the successful entrepreneurial projects and transforming them into promising economic projects. Besides, the real added value of the incubators depends on the quality of the support and counselling. The study recommended setting specific criteria for the choice of the business to be incubated. These criteria must suit the local conditions and the economic benefits. Besides, it is necessary to prioritize the businesses that can growth, make an added value and job vacancies, rely on development and research, and consider the environmental conditions.

- b. The study of Boudiaf&Zoubir (2020): It is a paper entitled "the role of the technological business incubators in supporting the startups in Algeria". It aimed at showing the role of the technological incubators in increasing the creativity and promoting the relation between the research centers and the startups. The study used the analytical descriptive method and discussed the experiences of some states in this context. It focused on the French and Saudi cases, and referred to the Algerian. Findings showed that Algeria lacks the sufficient number of the technological incubators needed to direct the national economy towards the knowledge economy, which are the real shelter for the innovative investors who contribute to the national economy, as is the case of France and KSA. In the end, the study recommended using more modern and efficient methods to allow the investments establishment.
- c. The study of Matnawi, Hattab, &Qallach (2023): It is a paper entitled "the efficiency of the entrepreneurship education in the Algerian university in supporting the self-efficiency of the university students: study of a set of university students and graduates". It aimed at analyzing and measuring the effect of teaching the entrepreneurship in the Algerian university on the self-efficiency of the entrepreneurship amid the students. The study used the descriptive method to shed light on the main dimensions of the study variables and define them. In addition, it used the analytical method through the field survey tools and the statistical analysis to get the sufficient field data for analyzing the relation between the entrepreneurial education and the self-efficiency of entrepreneurship in the Algerian university environment.

The sample included 416 students from 29 universities. After data collection and analysis, the study confirmed the importance and positive effect of the entrepreneurship education of the self-efficiency through the dimensions of education programs, education methods, efficiency of the teacher, and the education environment. In addition, the study found out statistically significant differences due to the variable of the gender, and no differences due to the age and educational

level. In the end, the study recommended developing and improving the education programs, and adapting them to the international developments and the labor market needs.

- d. The study of Khazzar&Gharbi (2023): It is a paper entitled "the role of the business incubators in supporting the entrepreneurial spirit of the students: field study on the 2<sup>nd</sup> year master students at the department of economics and commercial and management sciences of the University of Batna 01". It aimed at showing the role of the business incubators in supporting the entrepreneurial spirit of the graduates, because the incubators are the main mechanism that provides the entrepreneurial projects with support and assistance. In this regard, the study used the analytical descriptive method and a questionnaire, which was administered to 130 informants. Later, 100 questionnaires were recovered for analysis with SPSS. Findings showed an entrepreneurial will from the students, who lack the necessary entrepreneurial skills for the good management of the ideas. In addition, the study found out a relatively weak relation between the activity of the business incubators and the entrepreneurial spirit of the informants. In the end, it recommended raising the students' awareness about the importance of free work and the entrepreneurial culture.
- e. The study of KharroubiLakouas&Betka (2023): It is a paper entitled "evaluating the success of the universitybusiness incubators in attracting and embracing the students projects: case study of the students of Mohamed Boudiaf University". It aimed at evaluating the universitybusiness incubators based on the evaluations of 31 experts. It used the analytical descriptive method and found out that theuniversitybusiness incubators provide excellent advisory and administrative services, and average financial and technical services. In return, the marketing services and the incubators' efforts to attract the students' projects remain under the expected level. In the end, the study recommended expanding the use of the information and communication tools to reach a wide audience of students. Besides, it is necessary to hold more trainings that focus on the importance of linking the students' research topics with innovative applicable projects in the socioeconomic environment.

We can consider our study as a continuity for the previously mentioned ones. However, it is the first that tackles the question of the universitybusiness incubators in the light of the new strategy adopted by the Ministry of Higher Education and Scientific research that targets changing the dissertations and theses with startup projects to be embraced by theuniversitybusiness incubators to execute their innovative ideas and boost the economy.

### 3 THE THEORETICAL FRAME OF THE STUDY

### 3.1 BASIC CONCEPTS ABOUT THEUNIVERSITY BUSINESS INCUBATORS

### 3.1.1 Definition of the university business incubators

The US National Business Incubators Association defines the business incubators as a vital tool that boosts the economies of the small and middle-sized companies, as they provide the entrepreneurs with a set of resources and services that support the growth of their businesses (Mubarak Al Mubaraki & Busier, 2010). Besides, the Center of the Strategic Evaluation and Services defines the business incubator as a body that facilitates the establishment of successful companies through comprehensive and complementary support, which includes its surface that provides a suitable space for innovation and invention. It adds that it supports the commercial services that foster the success and allow the startups to take advantage of the coalition and communication opportunities, because it allows experience exchange to achieve development and advance (Novotny et al., 2020).

As for the universitybusiness incubators, they are the place that provides services, experiences, and materials to the small projects, under an administrative and technical supervision from the experts until being able to survive and compete (Jadallah, 2018). In addition, they are complementary service institutions that are part of the universities. They provide students and graduates with programs, activities, and services to help innovate and establish small and middle-sized projects, which are accompanied until maturing and success (al Massajidi, al Jarbani & Jobrane, 2020).

Besides, they are units or centers that provide the support and guidance, and encourage the new technology-based business. In addition, they contribute to knowledge generation and management, and assist the investors to succeed (Pitark, 2007). The notion of the shift towards theuniversity business incubators was a turning point to bridge the gap between the academic side and the practical activities because the students' future depends on the surrounding conditions (Fayolle & Degeorge, 2006). Based on what was said, theuniversity business incubators are a set of procedures, facilities, programs, activities, and services provided by the universities to help the individuals, institutions, investors, and students achieve and develop their entrepreneurial goals.

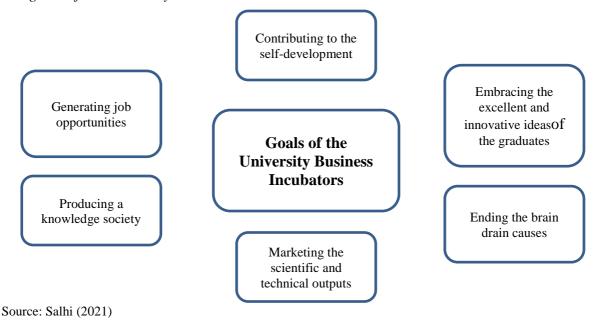
### 3.1.2 The goals and importance of the university business incubators

They are a tool for the economic development that targets a set of goals, as follows (Mahmoudi et al., 2021):

- strengthening the ties between the university and the socioeconomic surroundings through turning the students' researches into entrepreneurial ideas;
- using the researches as a source for innovation in the economy and society, and as a starting point to develop projects;
- supporting and encouraging the innovators, and transforming their ideas from mere thoughts and experimental models into real investments;
- promoting for the technical and scientific products, and limiting the brain drain.
- contributing to building a cyber-society and spreading knowledge.
   We can sum up the aims of the university business incubators in the following figure:

Figure 1

The goals of the university business incubators



We can say that the main goal of the university business incubators is embracing the innovators and transforming their ideas into a real investment. The services, support, and scientific assistance from theuniversity business incubators allow producing goods with an added value in the market.

Theuniversity business incubators are paramount in the general policies to support the innovation and entrepreneurship and found new small commercial projects. Thanks to their internal efforts and collaboration with the external cooperative nets, they provide the necessary technical and administrative support to the young entrepreneurs (Sergio Azevedo & Charbel José, 2012). Their importance lies in (KharrouobiLakouas & Betka, 2023):

- supporting the foundation of service or productive projects that are based on new techniques;
- providing scientific advice and studies about the small and middle-sized projects work;
- linking the small and middle-sized projects with the productive sectors and the market needs;
- helping the small and middle-sized projects overcome the financial, administrative, technical, and marketing obstacles, and providing the continuous support for success;
- providing opportunities of investment in important fields, such as industry and cyber fields:
- contributing to the socioeconomic development through providing a work environment that suits the development of thesmall and middle-sized projects, mainly those that rely on technology and industries;
- providing the resources that reinforce the growth.

### 3.1.3 The services of the university business incubator

Theuniversity business incubators make lot of tasks, as follows:

The advisory services: this includes the projects' feasibility studies, and the legal, marketing, technical, accounting, administrative, and financial advice. In addition, the incubators provide counselling about the intellectual property rights.

The administrative services: the university business incubators train the administrative elements on making their tasks and the necessary computer services.

**The human resources development:** they qualify the human resources, develop their skills, and link them with the labor markets and the various developmental organizations.

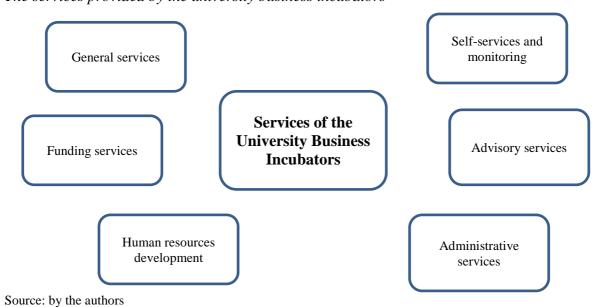
**The funding services**: they direct the business towards the funding companies and the governmental programs.

**The general services:** the security, the training places, etc.

The self-services and monitoring: they provide advice and guidance, etc.

We can sum up these services in Figure 2:

**Figure 2**The services provided by the university business incubators



The figure shows that the services provided by the university business incubators to the students generally include advisory, administrative, funding, and general services, the development of the human resources, and the personal-services and monitoring.

### 3.2 THE BUSINESS INCUBATOR OF GHARDAIA UNIVERSITY AND THE SUPPORT OF THE INNOVATIVE PROJECTS

### 3.2.1 The definition of the incubator

According to the executive decree 20-254 of September 2020 on the establishment of the national committee for the startup, the innovative projects, and the business incubator labels, the business incubator of the University of Ghardaia is one of the university departments and part of the general directorate of the scientific research and the technological development. It supervises and accompanies the university students to make them qualified scientific and professional entrepreneurs (The business incubator of Ghardaia University, 2023). It attracts, holds, and directs the innovative and creative ideas to transform them into productive economic projects and found startups that make material earnings that create the economic wealth and diversify the exports.

### 3.2.2 The types of the innovative and creative projects: (The business incubator of Ghardaia University, 2023)

- an innovative product, diversified services, the specific sectors models, and the target fields;
- education, continuous training, training and professional counselling, the educational and service e-platforms, the digital content creation, the foreign languages teaching, the translation, the care for the people with specific needs, the social census, the legal advice, the psychological expertise, the addiction therapy, the marital and familial counselling, the surveys, the ergonomics, the social engineering, the artificial intelligence, the computing linguistics, the physical education and training, the motor rehabilitation, the house sport, the linguistic reeducation, the speech therapy, the neural marketing, the social care, the psychological counselling, and the study of markets and customers' trends.

### 3.2.3 The main tasks of the incubator and its role in supporting the innovative projects (The business incubator of Ghardaia University, 2023)

- attracting and selecting the students with innovative and creative ideas;
- training and applying the Business Model Canvas BMC;
- accompanying and embracing the people with innovative ideas;
- providing a space for accompaniment, supervision, and training;
- making BMCs;
- providing the legal advice and judicial expertise;
- providing the scientific and technical expertise and developing the innovative and creative aspects of the primary projects;
- providing the conventions for the innovative projects owners;
- communication and making relations with the concerned bodies through the startups and patents;
- training on the efficient communication leadership and marketing techniques;
- studying the organizational behavior of the individuals and companies;
- providing the financial support and funding the labeled projects;
- providing the spaces for the startups work and activities;
- organizing study days, meetings, and trainings related to the entrepreneurial ideas and startups (for students and teachers);

• encouraging the teachers and researchers to adhere in helping the students fund private businesses and creating job vacancies.

### 3.3 DECREE 1275

We must point that the ministerial decree 1275 of 27 September 2022 was part of the policies targeting the valorization of the students' works and projects during their training careers. In this regard, it calls for providing the startup certificate or a patent, after registering in the digital platform "Ibtikar", which was designed by the Ministry of Higher Education, for the innovative students and the projects' owners.

### 3.3.1 The objective of the decree

The decree shows the methods of making the dissertations and theses to get a startup certificate. In this context, the bachelor, master, or PhD graduating students can take advantage of different incentives, such as the label "innovative project" or "startup". Since the issuance of the decree, the Ministry of Higher Education and Scientific Research launched wide awareness campaigns in the universities to incite the students to transform their innovative ideas into real projects to contribute to the socioeconomic development. In this context, the Ministry confirmed the students' capacity to invent highly competitive products and solutions. In addition, this decree shows the role the university must play as "a citizen institution" in finding the suitable solutions to the social issues, in taking the suitable measures, and in creating the added value to the national economy (The Ministry of Higher Education and Scientific research, 2022).

### 3.3.2 Making a dissertation or thesis to get "a university degree-startup" in the light of decree 1275

The decree shows the methods of making a dissertation or thesis to get "a university degree-startup". It aims at finding technological and digital solutions to the institutions. The dissertationor thesis to get a startup certificate includes a set of training programs on how to plan the businesses to facilitate the transformation of the researches into startups. The bachelor, master, and PhD students, and the engineering, architecture, and veterinary students can make graduation projects to get a university certificate of a startup. Under this decree, the participating students

receive training sessions and workshops on the commercial model, electronic marketing, business management, finance, and accounting, as provided by Article 05.

In addition, the majoring students can get support and resources from the university business incubators and the interested socioeconomic partners to transform their ideas into projects. This aims at boosting the entrepreneurial spirit and help the startups grow and succeed. Besides, the excellent projects shall participate in a national competition for the best startup to valorize and honor the winning projects with financial rewards from the Ministry of Higher Education and Scientific Research and the socioeconomic partners.

### 4 METHOD AND TOOLS

### 4.1 THE STUDY POPULATION

The study population includes all the 94 students enrolled in the startup projects ( $3^{rd}$  year bachelor and  $02^{nd}$  year master students) in the faculties of the University of Ghardaia in 2022-2023.

### 4.2 THE SAMPLE OF THE STUDY

We administered a questionnaire electronically to the informants. Thus, the sample is purposive based on the data provided by the director of the business incubator of the University of Ghardaia. Later, we collected back 60 questionnaires. Table 1 shows the distribution of the informants.

**Table 1** *The distribution of the informants according to the study variable* 

The variables		The number	The percentage%
The conden	Male	33	55
The gender	Female	27 45	45
The educatioanl	3 <sup>rd</sup> year bachelor	09	15
level	2 <sup>nd</sup> year master	51	85
	Faculty of sciences and technology	34	56.7
	Faculty of economics and commercial and management sciences	13	21.7
The femiles	Faculty of the human and social sciences	03	05
The faculty	Faculty of the nature and life sciences and the land sciences	06	10
	Faculty of letters and languages	04	6.6
	Faculty of laws and political sciences	00	00

Source: By the authors based on the outputs of SPSS

The table shows that most of the informants are males, with a rate of 55%, while the rest are females. Besides, the 2<sup>nd</sup> year master students make 85% of the informants. In this regard, most of the students who deposited the startups projects in the business incubators are from the faculty of the sciences and technology, with a rate of 56.7%, because most of the technical projects come from these two fields, unlike the human and social sciences, where it is difficult to find an innovative idea.

### 4.3 THE STUDY TOOL

We designed a questionnaire to measure the role of the university business incubators in accompanying and supporting the innovative projects in the light of decree 1275, and based on the conceptual frame and the previous studies. The questionnaire has two sections:

**Section one:** it includes the primary information of the informants (the gender, the educational level, and the faculty).

**Section two:** it measures the role and effect of the university business incubators in accompanying and supporting the innovative projects in the light of decree 1275. It has 03 chapters and 22 items that show the study questions and hypotheses. The answers must be by choosing "strongly agree, agree, neutral, disagree, and strongly disagree".

### 4.3.1 The validity of the tool

We formulated the items to suit the study topic and presented the questionnaire to a group of experts at the University of Ghardaia to review it. Then, we modified the items based on their suggestions. Thus, we had 22 items in the end.

### 4.3.2 The consistency of the tool

To examine the consistency of the tool, we calculated Cronbach's Alpha, as shown in Table 2:

 Table 2

 The consistency coefficients of the study dimensions

The study fields	Number of items	Cronbach's Alpha
Supporting and accompanying the innovative projects	07	0.790
The creative thinking and providing solution	06	0.763
The success of the innovative projects	09	0.909
The total degree of the role of the university business incubators in accompanying and supporting the innovative projects	22	0.926

The table shows that the value of Cronbach's Alpha of therole of the university business incubators in accompanying and supporting the innovative projects is between 0.790 and 0.909. Besides, the dimension of the success of the innovative projects got the highest consistency coefficient while that of the creative thinking and providing solutions got the lowest. In addition, the value of the total degree of Cronbach's Alpha is 0.926, which shows the exactness of the tool.

**Table 3**The normal distribution test for the study dimensions

The study dimensions	Z value	significance
Supporting and accompanying the innovative projects	1.808	0.003
The creative thinking and providing solutions	1.328	0.059
The success of the innovative projects	0.979	0.293

Source: By the authors based on the outputs of SPSS

The table shows that the significance value of the normal distribution test is 1275. The values of the dimensions of the creative thinking and providing solution and of the success of the innovative projects are more than 0.05, while the value of supporting and accompanying the innovative projects is less than 0.05. Therefore, we can say that the sample follows the normal distribution.

### 4.4 THE STATISTICAL PROCESSION

After data collection, we coded them by turning the verbal answers into numbers. In this regard, "strongly agree" gets 5 points, "agree" gets 04, "neutral" gets 03, "disagree" gets 02,

and "strongly disagree" gets 01. Thus, the tool measures the role of the university business incubators in accompanying and supporting the innovative projects in the light of decree 1275 from the perspective of the informants. In the statistical procession, we extracted the numbers, arithmetic means, standard deviations, Cronbach's Alpha, and made T test, ANOVA test, and the simple regression analysis, relying on SPSS 20.

### **5 RESULTS AND DISCUSSION**

This section presents the findings according to the study questions and hypotheses. We can interpret the values of the arithmetic means as follows:

 Table 4

 The arithmetic means indications

Arithmetic mean	Indication
1.79 - 1.00	Very low
2.59 – 1.80	Low
3.39 – 2.60	Average
4.19 – 3.40	High
5.00 - 4.20	Very high

Source: By the authors based on the literature review

In the light of the statistical procession of the data, we found out the following:

### 5.1 TESTING THE STUDY HYPOTHESES

Q1: Is there a statistically significant relation at significance level 0.05 for the university business incubators in supporting and accompanying the innovative projects from the perspective of Ghardaia University students?

**Table 5**The arithmetic means and the standard deviations of the dimension of the role of the university business incubators in supporting and accompanying the innovative projects

number	Supporting and accompanying the innovative projects	Arithmetic mean	Standard deviation	Degree	Rank
1	The university business incubators provide the necessary support to the students, such as funding, counselling, and guidance	4.13	1.096	High	02
2	The university business incubators focus on the quality of support provided to the students, in addition to the technical level and experience of the counsellors who provide the support	0.965	High	05	
3	There is a correspondence between the students' projects and the goals of the university business incubators because the incubators can provide the suitable materials to support these projects	3.67	0.986	High	06
4	The university business incubators can help me build a net of commercial and professional relations that help my project	3.70	0.997	High	04
5	I advise my colleagues to deal with the university business incubators to support and accompany the students' projects	4.17	0.693	High	01
6	I managed to get beneficial advice from the university business incubators to develop my innovative project	4.12	0.804	High	03
7	I faced many problems when dealing with the university business incubators	3.27	0.972	Average	07
	degree of the role of the university business rs in accompanying and supporting the innovative	3.819	0.624	High	

The table shows that the role of the university business incubators in supporting and accompanying the innovative projects has an arithmetic mean of 3.819 and a standard deviation of 0.624. Besides, the highest item is number 05, which states, "I advise my colleagues to deal with the university business incubators to support and accompany the students' projects" with an arithmetic mean of 4.17 and a standard deviation of .693. On the other hand, the lowest is number 7, which states "I faced many problems when dealing with the university business incubators" with an arithmetic mean of 3.27 and a standard deviation of 0.972, followed by number 3 "There is a correspondence between the students' projects and the goals of the university business incubators because the incubators can provide the suitable materials to support these projects", which had an arithmetic mean of 3.67 and a standard deviation of 0.986.

Q2: Is there a statistically significant relation at significance level 0.05 for the university business incubators in fostering the creative thinking and providing solutions from the perspective of Ghardaia University students?

**Table 6**The arithmetic means and the standard deviations of the dimension of the role of the university business incubators in the creative thinking and providing solutions

number	Creative thinking and providing solutions	Arithmetic mean	Standard deviation	Degree	Rank		
1	The university business incubators provide the suitable environment to develop the innovative ideas	3.88	0.715	High	06		
2	The university business incubators encourage the students to innovate, think creatively, and develop their entrepreneurial skills	students to innovate, think creatively, and develop 4.17 0.457 their entrepreneurial skills					
3	The university business incubators increase the number of students' startups	4.02	0.792	High	05		
4	The university business incubators encourage and support the students to turn their ideas into real projects	4.17	0.587	High	02		
5	The university business incubators encourages the students to develop and improve the existing goods and services and find new solutions to the technological and socioeconomic problems	4.12	0.640	High	03		
6	The university business incubators encourage the youths to plan for the professional and entrepreneurial future instead of the government jobs	4.07	0.710	High	04		
	degree of the role of the university business rs in the creative thinking and finding solutions	4.069	0.446	High			

The table shows that the role of the university business incubators in the creative thinking and providing solutions is high with an arithmetic mean of 4.69 and a standard deviation of 0.446. The highest item is number 2 "The university business incubators encourage the students to innovate, think creatively, and develop their entrepreneurial skills" with an arithmetic mean of 4.17 and a standard deviation of 0.457, followed by "The university business incubators encourage and support the students to turn their ideas into real projects" with an arithmetic mean of 4.17 and a standard deviation of 0.587. As for the lowest, it is "The university business incubators provide the suitable environment to develop the innovative ideas" with an arithmetic mean of 3.88 and a standard deviation of 0.715.

Q3: To what extent did the innovative projects succeed in the light of decree 1257 from the perspective of Ghardaia University students?

**Table 7**The arithmetic means and the standard deviations of the dimension of the success of the innovative projects in the light of decree 1275

number	The success of the innovative projects	Arithmetic mean	Standard deviation	Degree	Rank
1	The awareness raising by the university business incubators to introduce the students to the entrepreneurial culture increases the economic development	0.656	0.715	High	07
2	The counselling role of the university business incubators in analyzing the investment opportunities and helping set the strategic and marketing plans contributes to the success of the innovative projects	0.885	0.457	High	08
3	The communicational role and the strategic partnerships that the university business incubators can adopt increase the chances of the supported innovative projects	0.675	0.792	High	05
4	The university business incubators contribute to increasing the number of startups and work for their survival and growth after a short time of their foundation	0.752	0.587	High	02
5	It is possible to make financial earnings from the startups with the help of the university business incubators	1.091	0.640	High	09
6	It is possible to improve the professional and economic paths of the students through integrating them in founding startups and developing their entrepreneurial sills	0.688	0.710	High	04
7	Decree 1275 enables the universities to support the young entrepreneurs and increase innovation in the society	0.681		High	01
8	Decree 1275 increases the job opportunities and reinforces the local economy through establishing startups that create new jobs	0.671		High	03
9	Decree 1275 allows the sustainable and social development through supporting the startups that target solving the environmental and social issues	0.899		High	06
	degree of the success of the innovative projects in of decree 1275	3.940	0.600	High	

The table shows that the success of the innovative projects in the light of decree 1275 has an arithmetic mean of 3.940 and a standard deviation of 0.600. In this regard, the highest item is 07 "Decree 1275 enables the universities to support the young entrepreneurs and increase innovation in the society" with an arithmetic mean of 4.10 and a standard deviation of 0.681. On the other hand, the lowest is "It is possible to make financial earnings from the startups with the help of the university business incubators" with an arithmetic mean of 3.72 and a standard deviation of 1.091, in addition to "The counselling role of the university business incubators in analyzing the investment opportunities and helping set the strategic and marketing

plans contributes to the success of the innovative projects" with an arithmetic mean of 3.72 and a standard deviation of 0.885.

Q4: Are there statistically significant differences at significance level 0.05 between the students groups due to the variables of gender and educational level in evaluating the role of the university business incubators and in the success of the innovative projects?

Table 8

The results of T test on the significance of the differences between the students' groups in evaluating the role of the university business incubators in accompanying and supporting the innovative projects in the light of decree 1275 according to the gender variable

Gender	Number	Arithmetic mean	Standard deviation	Degree of freedom	T value	Significance
Male	33	3.675	0.7339	32	2.021	0.003
Female	27	3.994	0.405	26		

Source: By the authors based on the outputs of SPSS

Table 8 shows a significance level of 0.003 and, thus, statistically significant differences at significance level 0.05 for the role of the university business incubators in accompanying and supporting the innovative projects in the light of decree 1275 according to the gender variable. This means that the males and females do not have the same perspectives. In addition, the startup projects can successfully substitute the dissertations and theses and have positive socioeconomic effects.

Table 9

The arithmetic means, the standard deviations, T test, and ANOVA test results for the differences in the role of the university business incubators in accompanying and supporting the innovative projects in the light of decree 1275 according to educational level

The Role of	The educational level	Number	Arithmetic mean	Standard deviation	source of variance	Sum of squares	Degree of freedom	Mean of squares	Calculated F	Significance
the University Business Incubators in Accompanying	3 <sup>rd</sup> year bachelor	09	2.95	0.859	Inter groups	419.902	1	209.951	73.203	0.05
and Supporting the Innovative	2 <sup>nd</sup> year master	51	2.86	0.822	Inside the groups	13322.877	58	73.203	-	
Projects in the Light of Decree 1275	Total	51	2.86	0.822	Total	.3322.877	59			

Source: By the authors based on the outputs of SPSS

<sup>\*</sup> Significant at significance level 0.05.

Table 9 shows statistically significant differences at significance level 0.05 for the role and effect of the university business incubators on accompanying and supporting the innovative projects in the light of decree 1275 due to the educational level. In this regard, the statistical significance equals the one used in the study (0.05). To know the source of the differences, we used LSD test, as shown in Table 10.

Table 10

LSD test for the differences in the role of the university business incubators in accompanying and supporting the innovative projects according to the educational level

<b>Educational level</b>	3 <sup>rd</sup> year bachelor	2 <sup>nd</sup> year master	
03 <sup>rd</sup> year bachelor		*0.127	
2 <sup>nd</sup> year master	*0.127		

Source: By the authors based on the outputs of SPSS

The table shows that the differences were on behalf of the 2<sup>nd</sup> year master students with a difference of 0.127 because these students have more academic maturity regarding the role of university business incubators in accompanying and supporting the innovative projects, and because their number in the sample exceeds that of the 3<sup>rd</sup> year bachelor.

### 5.2 THE CORRELATION COEFFICIENT

**Table 11** *The correlation coefficients of the study dimensions* 

Dimensions		Reinforcing the creative thinking and providing solutions	The success of the innovative projects
Correlation	Supporting and accompanying the innovative projects	*0.127	0.692
coefficient	Reinforcing the innovative thinking and providing solutions	/	0.778
significance		0.000	0.000

Source: By the authors based on the outputs of SPSS

The table shows that coefficient of correlation between supporting and accompanying the innovative projects, reinforcing the innovative thinking and providing solutions, and the success of the innovative projects is 0.692, which is relatively strong. On the other hand, the coefficient of correlation between reinforcing the innovative thinking and providing solutions and the success of the innovative projects is 0.778, which is strong.

### 5.3 THE REGRESSION COEFFICIENTS AND VARIANCE ANALYSIS

### 5.3.1 The regression coefficients and variance analysis of supporting and accompanying the innovative projects and reinforcing the innovative thinking and providing solutions

**Table 12**The regression coefficients and variance analysis of supporting and accompanying the innovative projects and reinforcing the innovative thinking and providing solutions

R value	$\mathbb{R}^2$	Adjusted R <sup>2</sup>	Standard error
0.573	0.329	0.317	0.36865

Source: By the authors based on the outputs of SPSS

The table shows that the coefficient of correlation of supporting and accompanying the innovative projects and reinforcing the innovative thinking and providing solutions is 0.573, which is generally average. Besides,  $R^2$  shows the rate of what the  $1^{st}$  dimension interprets from the  $2^{nd}$ . It is 0.329, which is under the average.

**Table 13** *ANOVA test results* 

Model	Sum of squares	DLL	Squares mean	D	Significance
Regression	3.856	1	3.856	28.374	0.000

Source: By the authors based on the outputs of SPSS

The table shows the significance of the regression and that there is a significant relation between supporting and accompanying the innovative projects and reinforcing the innovative thinking and providing solutions.

**Table 14** *The simple regression model* 

Model	Unparametrical coefficients		Parametrical coefficients	T	Significance
Wiodei	A	Standard	Beta	-	
		error			
Constant	2.506	0.297		8.430	0.000
The role of the university business	0.409	0.077	0.573	5.327	
incubators in supporting and accompanying the innovative projects					

Source: By the authors based on the outputs of SPSS

The table shows that the role of the university business incubators in supporting and accompanying the innovative projects changes according to their role in reinforcing the innovative thinking and providing solutions. In this regard, the one-degree change in the dimension of supporting and accompanying the innovative projects changes the dimension of reinforcing the innovative thinking and providing solutions with a value of 0.409; i.e., the one-degree increase in the dimension of supporting and accompanying the innovative projects increases the dimension of reinforcing the innovative thinking and providing solutions with a value of 0.409, and vice versa.

# 5.3.2 The regression coefficients of the role of thebusiness incubators in supporting and accompanying the innovative projects and the dimension of the role of the university business incubators in the success of the innovative projects

Table 15

The regression coefficients of the role of the business incubators in supporting and accompanying the innovative projects and the dimension of the role of the university business incubators in the success of the innovative projects

R value	$\mathbb{R}^2$	Adjusted R <sup>2</sup>	The standard error
0.692	0.479	0.470	0.43730

Source: By the authors based on the outputs of SPSS

The table shows that the coefficient of correlation between the dimension of the role of the business incubators in supporting and accompanying the innovative projects and the dimension of the role of the university business incubators in the success of the innovative projects is 0.692, which is relatively strong. As for the value of  $R^2$ , it shows the rate of what the  $1^{st}$  dimension interprets from the  $3^{rd}$ ; it is estimated at 0.479 and is under the average.

**Table 16** *ANOVA test results* 

Model	Sum of squares	DLL	Mean of squares	D	Significance
Regression	10.204	1	10.204	53.362	0.000

Source: By the authors based on the outputs of SPSS

Table 16 shows a significant relation between the role of the business incubators in supporting and accompanying the innovative projects and the dimension of the role of the university business incubators in the success of the innovative projects.

Table 17

The simple regression model

Model	Unparametrical coefficients			Parametrical coefficients		Significance
Model	A	Standard error	Beta			
Constant	1.398	0.353			3.963	0.000
The role of the university business incubators in the success of the innovative projects	0.666	0.091	0.692	7.305	5.327	-

The table shows that the role of the university business incubators in supporting and accompanying the innovative projects changes according to their role in the success of the innovative projects. In this regard, the one-degree change in the dimension of supporting and accompanying the innovative projects changes the dimension of reinforcing the success of the innovative projects with a value of 0.666; i.e., the one-degree increase in the dimension of supporting and accompanying the innovative projects increases the dimension of the success of the innovative projects with a value of 0.409, and vice versa.

#### 6 RESULTS DISCUSSION AND ANALYSIS

Our findings show that:

- Regarding the axis of the role of the university business incubators in supporting and accompanying the innovative projects, the informants see that theuniversity business incubators are a modern tool set by the Ministry of Higher Education to incarnate their ideas and startups. Thus, they advise their colleagues to deal with them to get support. This was proven by item 05, which ranked 1<sup>st</sup> in the axis. This is explained with their relative understanding of the role of these incubators and of their abilities to achieve their goals to invent new applicable projects. However, the informants see some problems in dealing with theuniversity business incubators, as proven by item 07, which ranked last. This is explained with the absence of a direct method to deal with the incubators because the news about meetings with the students are published only on the Facebook page, not sent directly to the students' emails. In this regard, the questionnaire included a space for open answers by the students, where they mentioned some issues, including not understanding the mechanisms of this notion's work due to the different views and understandings of the dictations of decree 1275 by the teachers and trainers.

- Besides, some informants see that the problems are related to themselves, not to the incubators, because they work and have no time to attend the training session.
- As for the axis of the role of the university business incubators in reinforcing the innovative thinking and providing solutions, the informants see that theuniversity business incubators encourage the students to innovate, think creatively, and develop their entrepreneurial skills, as proven by item 02, which ranked 1<sup>st</sup> in the axis. This is explained with the fact that the university business incubators accelerate the businesses and can link the academic and professional aspects through shaping the skills acquired during the university career, mainly in the technical fields where the creative thinking is higher than in the human and social fields. Moreover, the informants confirm the role of the university business incubators in providing an environment that suits the innovative ideas, as shown in item 01, despite it ranked last in the axis. This is due to the existence of other bodies that accompany the projects after their approval by the incubator. In this regard, the central bodies of the Ministry of Higher Education and the Ministry of Digital Economy and Startups develop these projects and grant the official accreditation through the label "startup". Besides, they provide the financial support, which is the most prominent challenge and cornerstone for the startups.
- Concerning the success of the innovative projects in the light of decree 1275, the informants see it is possible to reinforce the universities' ability to support the young entrepreneurs and increase innovation in the society. This is proven by item 07 that ranked 01<sup>st</sup>. This is explained with the possibility of equipping the universities in the future with business accelerators that make the tasks of the university business incubators, of devoting special funds to support the innovative projects. In this regard, the Ministry shall devote the budgets according to the needs of each university and the number of startups. Furthermore, the informants see it is possible to make earnings from the startups that are founded with the help of the university business incubators, as proven by item 05, despite it ranked last in the axis. This seems logical because the main goal of the startups is creating jobs to the students without waiting for the governmental unconditioned support. In addition, the nature of these projects is economic and aims at making profits and achieving the state development. Thus, the projects go with the aim of the decree 1275, which basically aims at incarnating the innovative ideas of the students through founding startups.

### **6.1 THE STUDY RESULTS**

Our findings show that:

- the degree of the university business incubators support and accompaniment of the innovative projects from the perspective of the informants is high, as the arithmetic mean is 3.819 out of 05;
- the role of theuniversity business incubators in reinforcing the innovative thinking and providing solutions is high, as the arithmetic mean is 4.069;
- the success of the innovative projects in the light of decree 1275 from the perspective of the informants is high, as the arithmetic mean is 3.940 from 05;
- there are statistically significant effects for theuniversity business incubators on the success of the innovative projects in the light of decree 1275 due to the gender and the educational level on behalf of the 2<sup>nd</sup> year master students;
- the one-degree increase in the role of theuniversity business incubators in supporting and accompanying the projects increases their role in reinforcing the innovative thinking and providing solutions with a value of 0.409, and vice-versa;
- the one-degree increase in the role of theuniversity business incubators in supporting and accompanying the projects increases their role in the success of the innovative projects with a value of 0.666, and vice-versa;
- the university business incubators can support and accompany the innovative projects in the light of decree 1275 from the perspective of the informants.

### 6.2 THE STUDY RECOMMENDATIONS:

In the light of the study results, we recommend:

- it is necessary to raise awareness about the roleand benefits of theuniversity business incubators for the students through making campaigns and workshops;
- the university business incubators must develop support programs that satisfy the needs of the innovative students, give training programs to develop the technical and entrepreneurial skills, and support the students in developing the ideas and innovations.
- the university business incubators must increase communication with the students and the various concerned parties, such as the governmental and private companies. In

- addition, it is possible to widen the nets and establish partnerships to support the innovative projects and improve the chances of their success;
- the university business incubators must provide financial support, and the technical and counselling support from the industries and businesses to the innovative students because it is crucial for the success of their projects;
- the performance of theuniversity business incubators must be continuously evaluated to measure the efficiency of their programs and services. Thus, we can use these evaluations to improve and develop more efficient programs;
- it is necessary to consolidate the positive competitiveness between the students through organizing competitions that encourage innovation and startups.

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