# Business Incubator as an Effective Mechanism for Attracting Student Projects "Tamanrasset University as a Model"

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Submission: 21/07/2025; Accepted: 15/02/2026; Published: 21/03/2026

## Abstract

In this research paper, we address the stereotypical status of the university as a key driver of economic development, based on the prospects of this university, which are evident through its specializations and research fields, as well as the geographical region. Tamanrasset University has features and characteristics both unique and similar to other national universities. Given its location in the southeastern Algeria, it provides scientific outputs in line with the development requirements of the region. This burden falls on the university's business incubator, which seeks to attract and bring in people with ideas and student projects and create startups capable of generating wealth and job opportunities for youth.

This vision is based on embodying the startup approach through practical mechanisms, apparent by establishing an integrated ecosystem that links specialized university laboratories (mainly in fields such as renewable energies and electronics technology) with the labor market. This ecosystem includes specialized business incubators, technical and administrative support programs, and facilitating innovators' access to initial funding and intellectual property protection, always in accordance with local market needs in attempt to create added value that encourages the development and prosperity of Intra-regional trade with neighboring countries.

**Keywords:** Business incubator, Tamanrasset University, startups, scientific research, entrepreneurship, economic development.

## Introduction

In times when global economy is accelerating and shifting toward a knowledge economy, universities emerge as a fundamental driver of economic development, not merely as centers for education and scientific research. This importance takes on an exceptional trait in regions with certain characteristics, such as the south of Algeria, which faces challenges related to its geographical remoteness and diversification of its economic resources. In this regard, Tamanrasset University with its distinguished research capabilities in vital fields such as renewable energies, electronics technology, and economic studies, aspires to play a pivotal role in transforming research and innovation outputs into startups capable of generating wealth and creating job opportunities for youth.

Entrepreneurship is one of the most important indicators of societal awareness, maturity in development plans, and targeted policies, where idea pioneers and entrepreneurs in developed countries are taken as leadership role models to be emulated for what they achieve and accomplish, and what they provide in investment opportunities and jobs that benefit society.

Through this research paper, we seek to present a strategic framework that highlights the role of Tamanrasset University as a catalyst for entrepreneurship, based on establishing an integrated ecosystem that links academic laboratories with the labor market, thereby contributing in diversifying the local economy and creating a sustainable development model. So, to systematically approach the intervention, we would divide it into two axes as follows:

**The First Axis: The Conceptual Framework for Entrepreneurship**

**First: What is Entrepreneurship**

Despite the antiquity of entrepreneurship and entrepreneurs, there is relative novelty in theoretical grounding, which has led to a multiplicity of concepts with a broad and a common scope that can be addressed through a series of definitions, most prominently:

It is defined as the process of designing, launching, and managing a new project, often starting as a small startup, with the aim of making profit by providing innovative solutions to existing problems or meeting unmet needs in the market (Aknine and Ferfera 56-78).

It is also defined as practicing an activity to invest in an existing opportunity that meets specific needs by establishing and operating an enterprise in a creative manner (Melbouci 49).

Also, it is defined as employing a set of skills to practice an activity that requires creativity and risk-taking to gain added value.

Likewise, it is defined as the process of innovating and developing methods and approaches to exploit new business opportunities.

From the above, we can define entrepreneurship as transforming a creative idea into a tangible economic reality characterized by continuity and growth.

**Second: Key Components**

1. **Innovation**: Presenting a new idea or developing an existing business model in a better way, such as a new idea or product, service, method of operation, or solution to an existing problem but in an unprecedented manner by developing an existing business model in a better way or improving what already exists, faster, cheaper, easier, smarter, or closer to people's needs. The important thing in innovation is that it has practical value (Gharbi 6), not just a strange idea.
2. **Risk-Taking**: Readiness to bear financial and professional risks in exchange for an opportunity to succeed, or yield higher returns, while accepting the possibility of financial or professional loss for the sake of seizing opportunities of growth and success. Risk-taking is venturing money or effort for the chance of success.
3. **Vision**: The ability to foresee future opportunities before others, in possessing a strategic vision that enables anticipating opportunities and future changes in the market, based on knowledge and awareness of upcoming opportunities before others notice them.

**Third: The Importance of Entrepreneurship**

1. **Creating Job Opportunities:** Startups contribute to reducing unemployment rates and creating job opportunities where startups contribute to providing new jobs and reducing unemployment rates.
2. **Economic Growth:** Pumping new funds and investments into the market, in turns the increase of economic activity in the country, which leads to: expanding existing projects and creating new ones, increasing job opportunities, raising production and income levels,

stimulating consumption and improving purchasing power (Butler 24), and supporting medium and long-term financial stability.

3. **Social Change:** Inventing products that change people's way of life (such as transportation apps or electronic payments), especially when inventing new products or services changes people's daily behavior and their interaction with society and economy, for example, transportation apps have changed the concept of car ownership while providing flexible job opportunities and improving access to transportation in cities.

As for electronic payments and digital wallets, they have reduced reliance on cash and facilitated e-commerce, increasing financial inclusion, especially for those without bank accounts, which is considered a social change because it not only changes technology but also reshapes daily habits, affecting economic relationships and changing concepts like trust, time, and convenience.

When an innovative product succeeds in becoming part of daily life, it not only serves the user but reshapes society itself.

**Fourth: Characteristics of a Successful Entrepreneur**

1. **Passion and Perseverance:** The ability to continue despite initial failure, as it gives you the internal drive to persist, even when results are not immediate or encouraging, while perseverance is your ability to stand up again after every failure, and learn from mistakes instead of giving up.

Because initial failure is not the end of the road, but often a necessary lesson to refine the idea and develop skills, as evidenced by many successful entrepreneurs who failed more than once before eventually succeeding.

2. **Flexibility:** Adapting to market changes and customer needs, meaning the entrepreneur's ability to quickly adjust plans and strategies when market conditions alter or customer preferences shift, as the market is not static, and success comes to those who keep up with change rather than resist it, involving a strategy of changing the business model if it does not achieve expected results, or developing the product based on customer feedback, adapting to competition or economic crises, using new technologies to improve performance; flexibility's importance lies in increasing the project's survival and continuity chances, helping to exploit new opportunities (Muslim 14), and reducing losses resulting from rigid decisions.

3. **Leadership**: The ability to build and manage a team that believes in the idea, by building a team that trusts the vision and believes in project ideas, as well as motivating individuals and igniting enthusiasm in them even in difficult times, and creating a mechanism for clear communication and precisely defining goals and roles, leading by example in commitment, discipline, and taking responsibility, making decisions firmly while listening to the team's opinions.

A successful leader does not work alone but makes every team member feel that the project's success is their personal success.

**Fifth: Stages of Entrepreneurship**

It usually passes through several interconnected steps, and in a clear and concise manner, they are as follows:

**Brain Storming:** noting a problem and searching for a solution to it, which is a process that begins with identifying a real problem faced by individuals or society, then searching for an

effective and innovative solution to this problem, while observing challenges in daily life, analyzing the causes of the problem and its impact, with proposing practical and implementable solutions, and striving to develop the solution to become a product or service idea, also to acquire great importance, it must ensure that the idea is based on a real need, which increases the project's success chances (Mansour 20) and makes innovation directed toward serving a targeted segment or a broad audience.

**Feasibility Study:** Verifying that the idea is applicable and profitable, which is a process aimed at verifying that the idea is practically applicable and economically profitable (Al-Najjar 31) before starting its implementation, it usually includes:

1. **Market Feasibility:** Is there real demand for the product or the service?
2. **Technical Feasibility:** Can the idea be implemented with available capabilities?
3. **Financial Feasibility:** Are the costs reasonable and the return rewarding?
4. **Legal Feasibility:** Is the project compliant with laws and regulations?

**Business Plan:** Drawing a roadmap for the project (Khasawneh 31): it explains how the idea will be transformed into reality through planning, marketing, financing, and operations, usually including:

1. **Marketing Plan:** Identifying the target audience, pricing strategy, and advertising platforms.
2. **Financial Plan:** Estimating costs, funding sources, and financial projections.
3. **Operational Plan:** Daily work mechanism, human resources, and operations.

Its importance lies in organizing implementation steps, as it helps attract investors, increases the project's chances of success and sustainability, and the business plan is considered the practical guide that directs the project from the beginning to growth.

**Financing:** Searching for sources of financial support to start, continue, and develop the project, and its importance lies in implementing the business plan (Naem 22), covering operating and growth costs, and helping the project continue in its early stages; the most important funding sources are:

1. **Personal Savings:** Gives the project owner greater independence.
2. **Investors:** Provide capital in exchange for a share in the project.
3. **Loans:** Financing from banks or supporting entities with a commitment to repayment.

**Launch and Growth:** The actual start is to gradually develop the project and introduce it to the market, then develop and improve it gradually based on experience and customer feedback. Then, we reach a stage of utmost importance, which is the embodiment stage, meaning transforming planning into reality, and it helps discover strengths and weaknesses (opportunities, threats), paves the way for the project's sustainability and growth, and to reach these steps, the product or service must be actually launched, performance monitored and results measured, quality improved and new features added, and expansion in the market by increasing the number of customers. From all this, it becomes clear to us that the launch is the starting point, while growth is an ongoing journey toward success.

**The Second Axis: Business Incubator as an Effective Mechanism for Attracting Student Projects "Tamanrasset University as a Model"**

Tamanrasset University possesses a scientific and a technical base that qualifies it to lead this vision, especially in:

**First: The Assets and Opportunities Available to Tamanrasset University**

**1. Renewable Energies:** Due to the distinguished geographical location characterized by high solar radiation, which creates exceptional opportunities for innovation in solar energy and its applications, as the geographical location with high solar radiation forms a real competitive advantage in the field of renewable energies, especially solar energy, and this advantage can be invested in several innovative directions, including:

**a: Solar Energy Generation:** Photovoltaic solar stations for large-scale electricity production, as well as residential and industrial solar systems to reduce reliance on traditional energy.

**b: Smart Applications for Solar Energy:** Solar-powered water pumping systems, which are very important for agricultural and remote areas, and road lights and public places with solar energy, in addition to charging devices and electric vehicles using only the sun.

**c: Innovation and Entrepreneurship:** By working on developing energy storage solutions (batteries), designing low-cost solar equipment suitable for the local environment, also encouraging investment in accompanying companies, such as startups specialized in maintenance (Murad 23), installation, and energy consultations.

**2. Electronics Technology and Communications:** With the development of remote sensing technologies and electronic applications suitable for desert environments, the field of electronics and communications technology has become very promising, especially with the emergence of electronic applications designed specifically for desert environments; this gives it a pivotal role and opens horizons in several integrated fields, the most important of which are:

**1.** Satellites for monitoring climate, drought, and environmental changes.

**2.** Unmanned Aerial Vehicles (Drones) for monitoring crops, water resources, and infrastructure.

**3.** Smart Sensors for measuring temperature, humidity, soil and air quality.

**4.** Electronic Applications Suitable for Desert Environment, due to harsh conditions (high heat, dust, winds), special solutions have emerged such as: heat and dust-resistant electronic devices, energy systems relying on solar power, low-energy consumption communication networks, which opens new applications by using several technologies, such as smart agriculture in arid areas, energy, oil, gas, monitoring roads and facilities, managing natural resources, combating desertification, and early warning systems for environmental disasters, which contributes to developing local solutions suitable for the Algerian desert environment, establishing startups in the Internet of Things, drones, data analysis, and collaboration with agriculture, energy, and environment sectors.

**3. Human Capital:** Students and researchers representing creative energy can be directed toward entrepreneurship if the appropriate supporting ecosystem is found, using:

- Modern scientific knowledge convertible into practical solutions.
- Creative energy and enthusiasm for experimentation and breaking traditional models.
- Research and development capability that gives projects a competitive edge.

But this eagerness does not flourish on its own; rather, it needs a supporting ecosystem that includes:

- Universities open to entrepreneurship: incubators, innovation clubs, technology transfer offices.
- Training in entrepreneurial skills: project management, marketing, financing.
- Actual linkage with the labor market, companies, and investors.
- Early financing mechanisms dedicated to student and research projects.
- Guidance and mentoring from entrepreneurs and experts.

When these elements are available, the student or researcher transforms from a seeker of knowledge to a creator of value, and the university becomes a true driver of economic and social development (Sharif 45).

**Second: Practical Mechanisms for Transforming Innovation into Startups:**

To achieve this vision, we propose working through the following mechanisms:

**1. Establishing a System of Specialized Business Incubators:** The current innovation unit must evolve into an integrated system that includes:

- Technological Incubator: Focuses on hosting projects based directly on scientific research results from laboratories, especially in renewable energies and electronics.
- Business Accelerator: Aims to push promising startups with a good business model toward maturity and into the market quickly, exercising intensive programs and customized mentoring (Belhadj 23).
- Platform for Experiments and Protection: Provides equipped workshops for creating prototypes and offers legal consultations on intellectual property protection, which is a crucial element for attracting investment.

**2. Building Strategic Partnerships with the Industrial Sector:** An innovation cannot succeed in isolation from market needs (Qamri 702). Therefore, it is necessary to establish:

- Industrial Advisory Boards: Including representatives from the local and regional private sector to guide research and innovation priorities.
- Joint Training and Vocational Training Programs: To guarantee alignment of educational outputs with future labor market needs.
- Industry-Funded Research and Development Contracts: Which ensure direct funding for applied research and provide a guaranteed market for outputs.

**3. Developing Supportive Infrastructure for Financing:** Financing represents one of the most important obstacles, and it can be overcome by:

Establishing a university seed fund, in partnership with supporting entities such as the National Agency for Support and Development of Projects, to support the very early stages of projects.

Organizing periodic events to present projects to share and equity buyers, investors and investment funds.

Simplifying procedures and linking innovators with national financing programs such as: The Loan Guarantee Fund for Startups (Al-Aifa 36).

**4. Enhancing the Culture and Education of Entrepreneurship within the University Campus:** The "employee" culture needs to transform into a "job creator" culture. This is achieved by means of:

- Incorporating mandatory or elective courses in entrepreneurship and innovation across all specializations.
- Organizing annual competitions and hackathons for the best startup idea.
- Hosting successful entrepreneurs and inspiring lectures to serve as accessible role models for students.

**Conclusion**

Tamanrasset University provides a broad space for attracting owners of modern and innovative ideas and projects from students in various specializations that are capable of embodiment and creating added value, and this is using the business incubator and the entrepreneurship house at the university, which provide both human and material capabilities, through specialized professors and competent engineers. It represents a fundamental pillar for any future development model; transforming it into a dynamic platform for stimulating technological entrepreneurship which nowadays is not a luxury option, but a strategic necessity to confront unemployment challenges, diversify income sources, and build a resilient economy.

This transformation requires strong institutional will and the adoption of a clear vision that redefines the university's role from being a "producer of graduates" to an "incubator of projects" and a "generator of wealth". Success in this path will contribute not only to creating individual startups, but also launch a comprehensive economic and social dynamic that achieves the desired sustainable development for the region.

**Suggestions and Recommendations**

At the university level, a strategic plan with clear features and objectives for entrepreneurship and innovation must be adopted, with an independent budget allocation and specialized work teams to oversee its implementation.

- Developing the innovation and technology transfer unit into a "Center for Technological Entrepreneurship and Innovation" with broader powers and representing the unified window for all support provided to innovators.
- Integrating the "entrepreneurship" path as a parallel path to the traditional academic path, where the student can obtain support for their startup project as part of graduation requirements (applied graduation project).
- Working with state authorities and national entities to issue a "University Entrepreneurship Charter" that facilitates procedures for establishing startups by students and researchers and provides tax exemptions in the first years.
- Establishing a mixed investment fund with capital from the university and private sector partners, dedicated to financing the expansion and growth stage for promising projects emerging from the incubator.
- Creating a digital platform (Tamanrasset Innovation Platform) that showcases projects, researchers, and available capabilities, and serves as the link between the university, investors, and industries locally and internationally.

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