
	Science, Education and Innovations in the Context of Modern Problems Issue 2, Vol. 9, 2026
	RESEARCH ARTICLE 
	<h2 style="text-align: center;">Entrepreneurship as an Engine for Sustainable Economic Growth: A Comparative Analysis of the Experiences of Turkey and Italy, Drawing Inspiration from the Entrepreneurial Regions Model in Algeria.</h2>

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<b>Keywords</b>	entrepreneurship, sustainable economic growth, economic regions, comparative advantage, Turkey, Italy, Algeria.

**Abstract**

This research paper aims to analyse the active role of entrepreneurship in driving sustainable economic growth, by comparing the experiences of Turkey and Italy in developing entrepreneurial ecosystems based on specialised economic regions and comparative advantage. To achieve this objective, the study adopts a descriptive and analytical comparative approach, drawing on theoretical literature on entrepreneurial ecosystems, regional specialisation and comparative advantage, in order to present a conceptual framework for establishing specialised economic regions in Algeria. Currently, entrepreneurship is a key driver of development and innovation in an economy characterised by intense and dynamic competition. By innovatively discovering and exploiting opportunities, entrepreneurs establish new enterprises, whether for final products or industrial integration. This contributes to job creation, expands the economic base, and serves as a fundamental engine for technological renewal and market reconfiguration. The results demonstrate that the success of Turkey and Italy is founded on three pillars: organised institutional support; regional specialisation based on comparative advantage; and collaboration among small and medium-sized enterprises. The study recommends adopting a model of specialised economic regions that focuses on the comparative advantages of each Algerian region while leveraging the strategic location of certain provinces.

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**Introduction:**

Academic literature increasingly suggests that small and medium-sized enterprises (SMEs) and start-ups are the backbone of many national economies. Entrepreneurs are now recognised as crucial in delivering innovative products and services, as well as providing solutions to pressing societal challenges (Farukh, Nawab & Akhilesh, 2025, p. 1781).

The experiences of many countries, including Italy and Turkey, convincingly demonstrate that this sector's effectiveness is not achieved through unplanned, general programmes and policies, but rather through integrated institutional models centred on the concept of specialised economic regions. These regions focus on the comparative advantages of each geographic area, directing them towards industrial and service clusters capable of competing nationally and globally. At the national level, Algeria is seeking to achieve structural economic transformation by reducing its reliance on hydrocarbon revenues. The country aims to develop promising sectors in various fields, such as agriculture, renewable energies and the pharmaceutical industry. This will contribute to the creation of multiple income sources, thus enhancing economic stability. Consequently, this research paper proposes a strategic framework to address this challenge, suggesting a model of 'Entrepreneurial Regions' tailored to each region.

#### **Main problem:**

Building on the previous points, we can pose the following issue:

How can Algeria draw inspiration from successful regional development models, such as Italian industrial regions and organised industrial zones in Turkey, to design a model of 'Entrepreneurial Regions' that relies on the comparative advantages of each area to achieve sustainable economic growth?

#### **Sub-research questions:**

This primary issue branches into the following research questions:

1. What critical factors contributed to the success of Turkey and Italy in establishing an effective entrepreneurial ecosystem?
2. How can the model of economic regions be applied to Algeria while taking local specifics into account?
3. What opportunities and challenges does activating entrepreneurial regions present in Algeria, and what role do the state and universities have in this process?

#### **Main hypothesis:**

To address the aforementioned issue, the following hypothesis is proposed:

The establishment of an "Entrepreneurial Regions" model in Algeria, based on integrating natural comparative advantages, historical production traditions and knowledge infrastructure, will lead to policies supporting small and medium-sized enterprises becoming more effective and stimulate entrepreneurship, thereby contributing to sustainable economic growth.

#### **Partial hypotheses:**

Several sub-hypotheses emerge from this hypothesis, as follows:

1. Providing integrated infrastructure and shared support services reduces entry barriers for new entrepreneurs (Turkish model).
2. The success of regional entrepreneurship is directly related to how deeply it is rooted in the region's production and cultural identity (Italian model).
3. A practical framework is offered for application in the Algerian context by dividing Algeria into entrepreneurial regions, identifying the characteristics and comparative advantages of each region, and outlining the role of the ecosystem (state, universities and the private sector) in activating this model.

#### **Importance of the study:**

This study is significant for several reasons:

- This research paper contributes to the development of a theoretical framework connecting entrepreneurial ecosystems with regional specialisation and comparative advantage.

It provides an in-depth analysis of the mechanisms behind the success of industrial region models in Italy and organised industrial zones in Turkey, identifying common mechanisms that could be implemented nationwide.

It also draws lessons and identifies successful factors that can be adapted, proposing a framework for dividing Algeria into specialised economic regions.

- It contributes to economic diversification and reducing reliance on hydrocarbons, thereby enhancing job opportunities and developing small and medium-sized enterprises.

#### **Objectives of the study:**

The study aims to achieve the following objectives:

1. Conduct a comparative analysis of the experiences of Turkey and Italy in developing entrepreneurial ecosystems based on specialised economic regions.
2. Draw lessons, mechanisms and success factors from these experiences and adapt them to fit Algeria's entrepreneurial ecosystem.
3. Propose a framework for dividing Algeria into specialised economic regions based on each area's comparative advantages.
4. Design and propose a practical model for Algeria based on the concept of entrepreneurial regions, identifying the priority project types and the network of stakeholders needed to achieve the desired economic development.

#### **Previous studies:**

The role of small and medium-sized enterprises (SMEs) in development has been addressed by many studies. One such study, conducted by Erdin and Gökhan (2020), examined the relationship between quality of life assessment and industrial development in Turkey. The proposed approach combines operational research with Geographic Information Systems (GIS) in order to achieve sustainable economic growth. According to their findings, quality of life and social and economic development are closely related to investment and manufacturing company presence. If the current development policy continues, areas with a low quality of life will fall behind other cities in terms of development. The study recommended supporting SMEs in order to achieve sustainable growth.

Another study by Cavallo, Ghezzi and Casali (2020) examined the relationship between urbanisation, industrial diversification, regional economies and incubator initiatives, and the establishment of innovative start-ups in Italy. Their empirical analysis was based on a sample of 6,018 innovative start-ups distributed across 104 Italian regions from NUTS 3, and the results revealed that incubator initiatives and industrial zones play a crucial role in establishing new projects. This supports the positive role of urban economies and industrial specialisation over diversification.

Similarly, Djidjik and Muragu's (2024) study aimed to provide a comparative analysis of the innovation ecosystem in SMEs in Algeria, Turkey, and Kenya, focusing on entrepreneurship and the quality of institutional frameworks to drive development. Despite their pivotal role in growth, the findings showed that these enterprises face significant institutional and structural challenges, such as limited access to financing, regulatory difficulties (bureaucracy), insufficient technological infrastructure, and a lack of entrepreneurial culture. Conversely, the study emphasised that facilitator institutional factors such as government support initiatives, regional cooperation networks, and a business culture are critical enablers. Thus, the study provided policymakers with a comparative perspective to enhance innovation and entrepreneurship amid interrelated social and economic contexts.

#### **Additional studies:**

One study by Ferdj (2024) aimed to highlight industrial zones and their impact on regional industrial attractiveness and competitiveness in Algeria. The study examined the interactions between non-institutional actors (specifically companies) and their regions. The study was based on an understanding of the local area and the effect of industrial zones on local companies' attractiveness and competitiveness. To this end, a quantitative statistical survey was conducted among 110 small and medium-sized enterprises located in various industrial zones within the Blida province. This enabled the impact of these industrial zones on local attractiveness and competitiveness to be assessed. The results showed that the industrial zones in Blida Province are highly conducive to company establishment and effectively attract entrepreneurs. The large number of companies present in these industrial zones indicates that they remain attractive locations and offer competitive advantages. It was concluded that, when well-planned and managed, industrial zones can play a crucial role in the attractiveness and dynamics of local industry, stimulating economic growth, enhancing job opportunities, encouraging innovation and supporting local and sustainable development.

By contrast, Zidane's (2025) study focuses on establishing a national innovation system as a strategic foundation for Algeria's vision for the years 2030, 2040 and 2050. Based on global best practices and the local context, it provides a methodological framework for aligning science, education, industry and governance with long-term national goals. The study identifies the key components of an effective national innovation system, including research institutions, universities, industrial clusters, regulatory policies and engagement with the diaspora. The study also presents a gradual roadmap, calling for institutional reform, capacity building and cross-sector collaboration, particularly within the green energy, agriculture and digital transformation sectors. This model promotes regional equity, responsible innovation, and social inclusion, drawing inspiration from global models and the Algerian context. By integrating innovation into public policies, Algeria can transition from being dependent on its resources to having a resilient, sovereign knowledge-based economy.

#### **Commentary on Previous Studies and Positioning of the Current Study:**

All previous studies emphasize the pivotal role of entrepreneurship in sustainable economic growth, highlighting the importance of an integrated ecosystem (the state, universities, and the private sector) and affirming the success of the

industrial region model in Türkiye and Italy. What this study adds is a comprehensive comparative analysis of the Turkish and Italian models, along with the proposal of a specific practical model for Algeria based on entrepreneurial regions.

## **1. The conceptual and theoretical framework of entrepreneurship and industrial regions:**

In addressing the proposed issue and answering the suggested hypotheses, we will clarify some concepts related to the study as follows:

### **1.1 Theoretical concept of entrepreneurship**

Economist Joseph Schumpeter (1934) is regarded as the father of the modern concept of entrepreneurship, linking it directly to innovation and economic dynamism. This leads to the formation of new markets and industries. He asserted that entrepreneurs are the primary drivers of large-scale economic change (Mumcu, 2025, p. 390).

Entrepreneurship is also defined as ‘a dynamic process involving the discovery of opportunities and the innovation of new ideas (products or services), the organisation and management of resources (including capital and labour), and risk-bearing, aimed at creating value (both economic and social) and achieving a sustainable impact or profit’ (Ratten, 2023, p. 80).

It can therefore be asserted that the modern definition of entrepreneurship encompasses the following essential elements:

- innovation in providing new solutions or improving existing ones
- risk-bearing through a high level of uncertainty while allocating considerable resources
- the creation of value aimed at achieving social and environmental impact rather than solely profit
- the effective organisation of resources for launching and growing the project to ensure sustainability, growth, and expansion

## **2. Economic Dimensions of Entrepreneurship**

Entrepreneurship contributes to economic development through several mechanisms, including the following:

### **2.1 Job creation**

Small and medium-sized enterprises (SMEs) are the main contributors to job creation. They are therefore considered essential for achieving the goals of ‘growth’ and ‘employment’. There are approximately 26 million SMEs operating within the European Union, providing jobs for 109 million people and accounting for two-thirds of the European GDP. Additionally, SMEs significantly contribute to the development and utilisation of new technologies due to their innovative and flexible structures. SMEs are particularly important for the EU economy. Consequently, the European Union supports SMEs in maintaining their flexible and innovative structures, leveraging these as a competitive asset (Erdin & Gökhan, 2020).

### **2.2 Economic diversification**

Regional economic development involves implementing policies and strategies to achieve balanced growth across various regions, enhance the efficiency of local infrastructure, and improve citizens’ quality of life. The complex interaction between entrepreneurship and economic development highlights the importance of understanding their mutual influence (Ferdj, 2024).

### **2.3 Innovation and technology transfer**

This refers to entrepreneurial clusters that stimulate innovation through disseminating knowledge and exchanging experiences among enterprises. Innovative entrepreneurship is defined as discovering, evaluating and exploiting opportunities that could lead to the commercialisation of inventions. The most commonly used empirical measure of innovation is the number of patents per capita, which is an indicator of innovative entrepreneurship (Westlund, 2011).

### **2.4 Local and Regional Development**

Local enterprises contribute to the development of remote areas and reduce regional disparities by setting up new entrepreneurial projects. This creates job opportunities, enhances knowledge dissemination and intensifies competition, which significantly increases productivity. They also play a crucial role in achieving economic growth by renewing the economic fabric, restoring market balance, raising production levels and encouraging creativity and innovation, all of which help to mitigate unemployment (Boulias, Boukrane & Beshichi, 2023).

## **3. The regional entrepreneurial ecosystem**

Entrepreneurial ecosystems can be defined as ‘a set of interconnected actors and factors that are coordinated in a manner that enables productive entrepreneurship within a particular area’ (Stam & Spigel, *Entrepreneurial Ecosystems*, 2016). Entrepreneurial activity is one of the outputs of the entrepreneurial ecosystem and is the process through which individuals

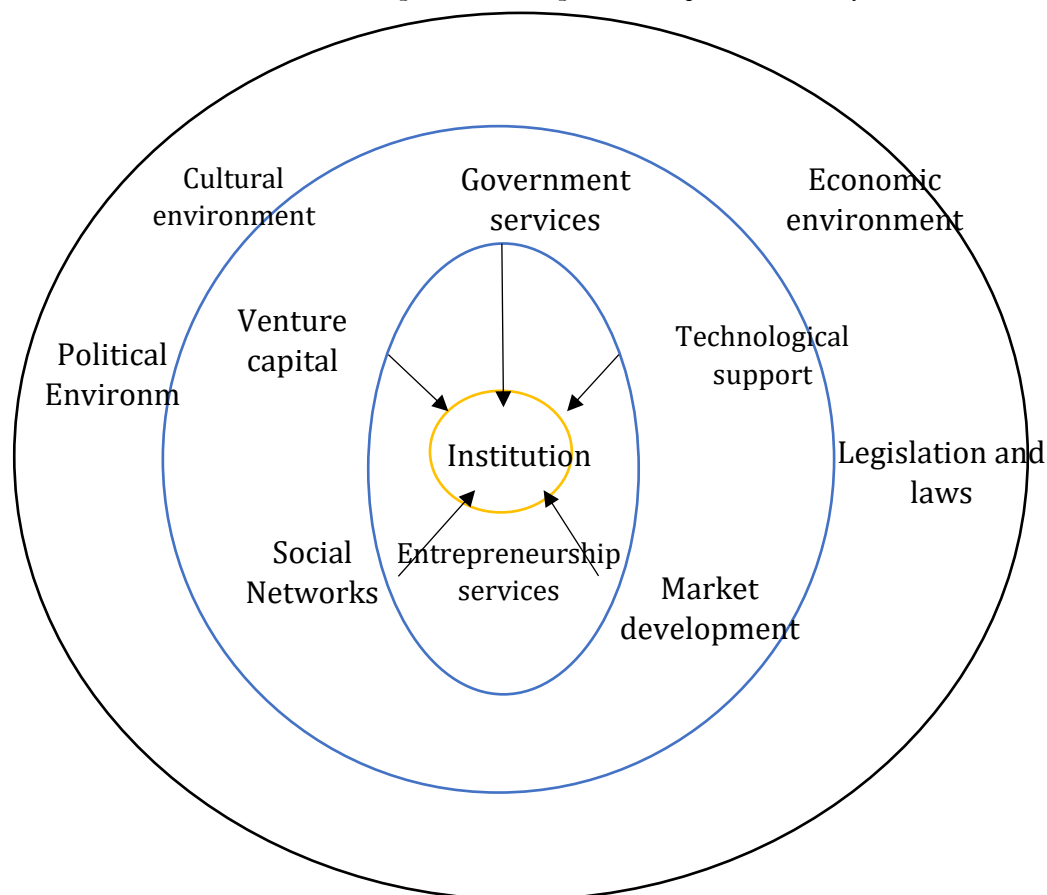
create opportunities for innovation. This innovation ultimately leads to new value in society, so it is the ultimate outcome of the entrepreneurial ecosystem, while entrepreneurial activity is an intermediate output. Entrepreneurial activity can manifest in various ways, including innovative start-ups, high-growth start-ups, and entrepreneurial employees (Stam & Spigel, *Entrepreneurial Ecosystems*, 2016, p. 2).

### 3.1 Components of the Regional Entrepreneurial Ecosystem

From the previous definition, we can conclude that the entrepreneurial ecosystem consists of an interconnected set of institutional, economic, social and cultural factors that interact to create an environment that incubates entrepreneurial activities. In a regional entrepreneurial ecosystem, the interaction between participants and the environment influences the level of innovation and regional entrepreneurial activities. Within this system, institutions play a direct role in innovation and entrepreneurship. Colleges, universities and entrepreneurial talent play a key role in communication and practices in the field of entrepreneurship. Venture capital is essential for supporting the entrepreneurial environment, while service institutions represent the bridge to entrepreneurship. The government plays a crucial role in developing the entrepreneurial environment. Entrepreneurs form the foundation of the regional entrepreneurial ecosystem.

Entrepreneurial services are closely linked to entrepreneurs, providing the financing, government support, technology, market access and social networks that the entrepreneurial community needs. A critical factor in the regional entrepreneurial environment is the peripheral level, which encompasses the political, economic, legal and cultural environments. These elements supporting entrepreneurship are interconnected with the entrepreneurial community, forming the regional entrepreneurial ecosystem (Lu, 2021, p. 174), as illustrated in the following figure.

Figure 1: The Regional Entrepreneurial Ecosystem



### 4. Regional Specialisation and Comparative Advantage

According to Lafay, the concept of comparative advantage refers not only to a country's ability to produce a good or service with higher productivity, as initially suggested by Ricardo, but also to greater product differentiation compared to other countries within a particular trading area (Stelliana & Danna-Buitrago, 2019).

In the regional context, comparative advantage is determined by:

#### Natural resources available

The results of a study by Gunton (2003) show that natural resources have the potential to provide a significant comparative advantage over other economic sectors due to the generation of resource rent, which exceeds the ordinary returns of other production factors. In Algeria, for instance, date palms in Adrar and minerals in Tamanrasset are among the most important natural resources providing comparative advantage.

**Specialised human capital:** Investment in human capital is critical for individuals, communities, and economies as a whole. Highly educated and skilled human capital is fundamental to economic growth due to its ability to foster innovation, adopt new technologies and enhance productivity (Urgaia, 2018).

### **Strategic geographical location**

When studying entrepreneurial activities, they are often assessed in relation to economically successful regions such as Silicon Valley. Some areas possess regional comparative advantages that attract entrepreneurs and facilitate innovation. Promising previous or current hubs for start-ups are usually interpreted as spatial focal points for entrepreneurial activities within certain cities or urban areas, and are considered conducive to regional economic development (Sternberg, 2021).

### **Available infrastructure**

Foster, Gorgulu, Straub and Vagliasindi (2023) assert that investment in infrastructure (e.g. roads, ports and communication networks) is crucial for enhancing productivity. This boosts production and trade, affecting the spatial patterns of regional economic activity and supporting comparative advantage. The results of this research also emphasise the importance of digital infrastructure in supporting economic growth.

## **5. Industrial Clusters and Economic Regions**

In recent years, industrial clusters have become a popular political tool in economic development strategies and plans. A growing body of empirical studies has demonstrated the positive impact of industrial clusters on regional and industrial performance, including job creation, patent registration and the formation of new companies.

Industrial clusters can be broadly defined as 'local agglomerations of competing and integrated economic actors and activities' (Komorowski, 2020). They represent geographical concentrations of companies, suppliers, service providers and related institutions within a specific field, linked by various external and integrative factors. Clusters are a natural manifestation of how specialised knowledge, skills, infrastructure and supporting industries can enhance productivity (Porter & Ketels, 2009).

Marshall (1920) is considered to be the first person to introduce the concept of the industrial region, linking industrial organisational efficiency with the idea of specialised industry or industrial location (Leitão, Ferreira & Pereira, 2024). This concept provided a foundation for formulating and implementing local policies that transformed traditional economic, social and infrastructural policies into specialised policies aimed at creating the necessary institutional and environmental conditions to enhance regional competitiveness (Sforzi, 2010).

### **Secondly, this paper analyses leading international experiences, focusing on the Italian and Turkish models.**

Special Economic Zones (SEZs) have emerged as powerful tools for supporting economic growth and development in countries around the world. These designated areas, often located near ports or major transport hubs, offer incentives and benefits to attract local and foreign investment. Below, we will review two successful examples in this field.

#### **1. The Italian model of supporting entrepreneurship**

Italy has supported entrepreneurship through the 'Industrial Districts' model, which has proven effective in creating a resilient economy based on small and medium-sized enterprises (SMEs), and in promoting individual initiative and innovation within specialised geographic regions. The model aims to encourage entrepreneurship and streamline supply chains for each activity. It reaches over 942,264 industrial and manufacturing sites and resources in 33 areas and 120 provinces across Italy (xmap, 2025). The model operates through the following steps:

##### **1.1. Creating Specialised Industrial Districts**

Governments and the private sector have developed homogeneous geographic areas (small districts) specialising in specific industries (textiles, furniture, jewellery, food, etc.) in central and northern Italian cities. This has formed a competitive industrial environment. Over time, this has led to the accumulation of production expertise and knowledge, and has established a strong network of relationships among companies, suppliers and local institutions (Daniele, Italian Industrial Districts: Theories, Profiles and Competitiveness, 2017).

##### **1.2 Encouraging Small and Family Entrepreneurship**

Most enterprises in these districts are small, family-owned businesses which are easy to establish and pass down. They rely on networks of family and local relationships. Additionally, legislation has facilitated the establishment of small enterprises by providing tax exemptions and financial incentives, thereby reducing the cost and risk of project creation.

### 1.3 Supporting vocational and university education focused on innovation

Italy has focused on technical and vocational education linked to districts, with strong technical and vocational institutes and universities that connect research with industry. Universities and institutes encourage innovation in local industries, manage projects with local companies and establish business incubators for graduates (ISFOL, 2003).

### 1.4 Support services and clusters: evidence of collaboration

Each district provides institutions and shared services (marketing, quality control, engineering laboratories, etc.) that alleviate the burden on new enterprises and assist them with innovation and growth. Intermediary institutions (chambers of commerce, associations supporting entrepreneurs and local banks) are also activated to support every new project owner with training, guidance and financing for small projects.

### 1.5 Incentive and Internationalisation Policies

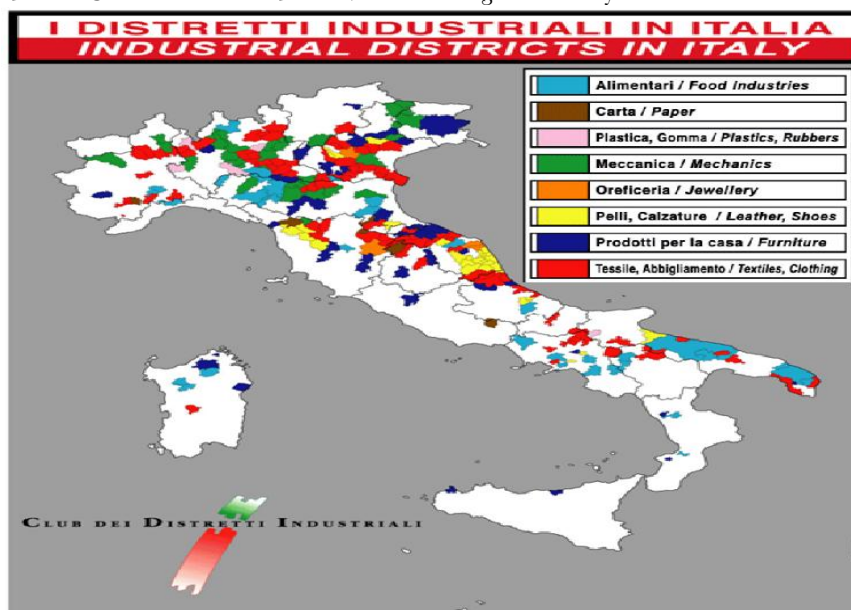
The government has supported and facilitated the export of products from these enterprises through international exhibitions and trade agreements. It has also aided the digitisation of institutions and the internationalisation of products via the 'Made in Italy' label. Industrial policy has focused on building a brand image for the region (e.g. leather production in Tuscany and furniture production in Veneto).

### 1.6 Economic protection and democracy

Laws have encouraged cooperatives and joint liability companies by providing financing facilities and flexible legal procedures, thus facilitating the transition from individual projects to larger collective entrepreneurial ventures.

The following map illustrates the locations of industrial districts in Italy.

Figure 2 Map of Industrial Concentration and Distribution of Regions in Italy



Source:  
p. 10)

(Barberis, 2009,

## 2. The Turkish Entrepreneurial Success

Model for

Turkey has implemented a range of policies and tools that transformed it from a traditional industrial economy into a vibrant environment for entrepreneurship and innovation, particularly at the level of small and medium-sized enterprises (SMEs) and technology startups. These include:

### 2.1 Organized Industrial Zones (OIZs) and Technoparks:

Turkey has established over 300 Organized Industrial Zones (OIZs) that host thousands of small and medium-sized enterprises, integrated with "Technological Development Zones" (Technoparks), which are often located near major universities (industrial-zones, <https://ozbekcpa.com/organized-industrial-zones-in-turkey>, 2025).

OIZs provide comprehensive infrastructure, including road and energy networks, water supply, administrative and service areas, as well as financing, training, and research and development incentives. Turkey has leveraged programs from the United Nations Development Programme (UNDP) to establish technoparks as innovation spaces (undp.org, 2025), allowing technology startups to operate in a dynamic environment by providing incubators with reduced office spaces, financial support, tax benefits, and access to the global EWOR platform to assist entrepreneurs (Dippold, 2025).

**2.2. Linking universities to industry and innovation**

The Turkish model emphasises building strong partnerships between universities and industrial zones. Professors, researchers and graduates participate directly in projects aimed at developing new products or services in collaboration with manufacturers, receiving direct support from the Turkish Ministry of Industry and Technology in particular (Sakarya, 2023). Universities such as ITU, METU and Bogazici have become entrepreneurial centres that manage acceleration programmes, incubators and technology start-ups (Dippold, 2025).

**2.3 Strong financial incentives and government support**

The government has provided substantial financial support through national programmes such as TÜBİTAK BİGG and KOSGEB. These programmes offer grants, interest-free loans and tax incentives for up to five years to innovative companies and SMEs as part of the Industry and Technology Strategy for 2030 (Technology, 2024). Additionally, programmes have been launched to facilitate funding for start-ups from investment funds and venture capital, with provisions for those wishing to export their products under the 2030 vision. Government programmes promoting the digitisation of the economy and supporting e-commerce have contributed to the expansion of start-ups and easier access to global markets (KACIR, 2025).

**2.4 Developing a supportive environment for entrepreneurship**

Dozens of incubators and business accelerators have been established at national and local levels to provide training, mentorship and guidance for young people and innovators (Team EWOR, 2025). The entrepreneurial landscape has flourished, with an increase in national and international competitions and exhibitions for start-ups creating opportunities for networking with investors and securing funding (Property-Turkey, 2025).

**2.5 Regional and international networking**

The Turkish ecosystem is connected to international networks of investors and experts, facilitating internationalisation and outreach (Property Turkey, 2025). Start-ups have been supported to participate in major international events such as CES, Web Summit and Slush, enabling them to expand rapidly beyond Turkey (Daily Sabah, 2025).

**3. Lessons learned from the two models**

There are commonalities between the two models that can be summarised as follows:

- Regionally directed planning: both models rely on specialised geographic areas focused on specific economic activities.
- Integration of universities and industry: There is a connection between academic research and the needs of industry.
- Tax and financial incentives: the government provides financial support and tax exemptions for start-ups.
- Integrated infrastructure: Comprehensive infrastructure is provided, including roads, communications, logistics services and energy.
- Promotion of entrepreneurial culture: This is achieved through training, education and awareness-raising initiatives.
- Mutual cooperation: There is collaboration between institutions, suppliers, and service providers.

The main differences between the two models are as follows:

Table 1: Fundamental differences between the Turkish and Italian models.

element	Turkish model	Italian model:
- Focus	Technological and innovative industries	Traditional industries (textiles, ceramics, leather).
Size of institutions	- A mix of small, medium and emerging technology enterprises	- Small family-owned enterprises
- Role of the State	- Strong, direct and comprehensive government support	- Focus on local initiatives due to limited government support

- Orientation:	Global focus on emerging markets and institutions.	- Local, with a focus on European markets
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Source: prepared by the researchers based on previous information.

### Third: Proposed Model for Entrepreneurial Regions in Algeria

In order to propose an effective model for specialised entrepreneurial regions in Algeria, the following steps are necessary:

#### 1. Division of Algeria into proposed entrepreneurial regions

For example, the northern region (coast and Tell) includes Algiers, Oran, Constantine, Annaba, Blida, Tizi Ouzou, Béjaïa and Skikda. This region is characterised by relatively developed infrastructure (airports, ports and highways) and a high concentration of national research centres, with a population density of around 70%. The area also has a skilled workforce in technology. These comparative advantages facilitate the establishment of start-ups specialising in artificial intelligence, technology, digitisation, innovative food industries, textiles, and cultural and marine tourism and marketing.

The eastern region, which includes Constantine, Souk Ahras, Tebessa, Guelma and Annaba, is home to phosphate and iron and steel mines. Preferred sectors here include mining, allowing startups to develop in certain industrial phases, as well as jewellery manufacturing, food processing, pharmaceuticals and the extraction and processing of phosphates.

The Central Highlands region, which includes Sétif, Bordj Bou Arreridj, Khenchela, Batna, Biskra and M'Sila, is distinguished by its traditional agricultural and industrial heritage, its diverse natural resources (including agricultural produce and medicinal herbs) and its sizeable labour force. The proposed priority sectors here are therefore mechanical engineering, transportation, sustainable agriculture (including organic farming), the production of healthy food products, home electronics manufacturing, and utilising the geographical location for supply and distribution chains.

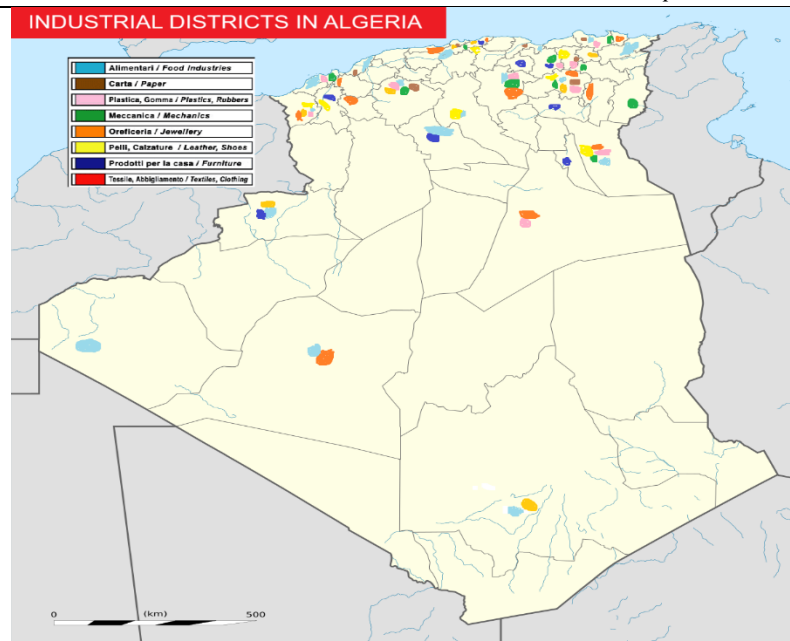
The Western Region includes the following cities and towns: Djelfa, Laghouat, Sidi Bel Abbès, Saïda, Mascara, Tiaret, Tlemcen, Naama and El Bayadh. This region has research centres and an industrial heritage in textiles, carpets, electronics and agriculture, particularly grains and legumes, as well as high-purity silica sand and livestock farming. The proposed priority sectors include electronic manufacturing, food processing and canning, dairy products and derivatives, feed manufacturing, organic fertiliser production, glass production, solar panels and fibreglass.

The Southeastern Region, which encompasses Ouargla, Ghadames, El Oued, Biskra and Ouled Jellal, has an exceptional comparative advantage thanks to its high solar energy potential, with over 3,000 hours of sunlight annually. It also has vast date palm groves, petroleum and gas resources, and extensive desert land for large-scale projects. Consequently, priority is given to encouraging start-ups in petrochemicals and large-scale petroleum products for energy generation, developing the food industry and enhancing desert agriculture, as well as textiles and carpets.

The Southwestern Region, which includes Adrar, Tamanrasset, Béchar, Béni Abbes, Ain Salah and Tindouf, also has a comparative advantage characterised by high solar energy potential, with over 2,500 hours of sunlight annually, valuable minerals and a strategic geographical location alongside the African Sahel countries. Therefore, it is proposed that hydrogen production facilities be established there at the lowest cost in the world, and that precious minerals, natural gum acacia and argan oil be extracted and processed. It is also proposed that an African barter system be developed to enhance economic integration.

The following map illustrates the distribution of industrial regions in Algeria.

Figure 3: Proposed model for the distribution of industrial regions in Algeria.



Source: Prepared by the researchers based on previous information.

## 2. A Practical Framework for Applying the Incubator and Accelerator Model

Algeria could benefit greatly from the Italian and Turkish approaches to encouraging entrepreneurship, as these models combine regional organisation, infrastructure support, integration with universities and targeted funding for start-ups. Therefore, Algeria could practically apply this to its own incubators and accelerators, as well as marketing and adopting the 'Made in Algeria' brand.

### 2.1 Designing Incubators and Accelerators According to Regional and Sectoral Divisions

Drawing inspiration from the Italian model, business incubators could be established in specialised regions based on each area's comparative advantage (e.g. a northern incubator could focus on technology and innovation, while incubators in the highlands could focus on food and traditional industries, and incubators in the south could specialise in desert tourism, renewable energy, and green hydrogen).

Drawing inspiration from the Turkish model, create accelerators linked to Organised Industrial Zones (OIZs) so that each industrial zone has a business incubator to help start-ups establish themselves and quickly launch products on the market.

### 2.2. Integrating universities and training centres in incubators and accelerators

Establish links between incubators and accelerators within universities and institutes, as in Turkey and Italy, through applied graduation project programmes and academic involvement in project development to nurture innovative ideas from students.

Provide research and development laboratories at universities for aspiring entrepreneurs to foster partnerships between professors and investors.

### 2.3 Providing comprehensive services within incubators and accelerators

Offer services such as financing, legal consultancy, marketing, training, digitisation and market analysis.

Create mentoring teams consisting of industry experts and academics to support entrepreneurs from idea generation to implementation and expansion, similar to the successful model employed in Turkey's technoparks and industrial zones.

### 2.4 Effective financial and tax incentives for hosted projects

Establish tax incentives and low-interest loans for start-ups within incubators and accelerators, similar to KOSGEB in Turkey.

Provide government grants for innovation and internationalisation, as well as for research and development within universities, to encourage projects that solve local problems or enhance Algerian products.

## **2.5 Encouraging regional cooperation and networking with entrepreneurs**

Intensify the organisation of events such as innovation fairs, idea competitions and entrepreneurship days, and create digital platforms for communication between incubators and accelerators throughout the country.

Involve local stakeholders and the private sector in managing incubators to ensure they closely align with the needs of businesses, thereby fostering sustainable working relationships and cooperation.

## **2.6 Promoting a Culture of Entrepreneurship**

Run awareness campaigns in the media, schools and universities, highlighting local success stories and showcasing companies that have emerged from incubators and accelerators and achieved success in local and international markets.

Strengthen university curricula by adding courses on entrepreneurship, practical management and project development.

We can therefore conclude that incubators and accelerators should be at the heart of universities and industrial zones. They should be supported by the state and the private sector and be tailored to the needs of each region. They should offer comprehensive services to ensure the sustainability of companies after they are established and facilitate their internationalisation.

## **3. Analysing opportunities and challenges**

Implementing and establishing an Algerian model that combines a specialised regional division (Italian style) with comprehensive infrastructure, financing and support (Turkish style) could create numerous opportunities. However, it would also face several challenges and difficulties, which can be summarised as follows:

### **3.1 Opportunities: The most notable include:**

- The abundant availability of solar energy, with over 3,500 hours of sunlight annually making Algeria one of the best countries in the world for solar energy production.

Substantial government financing, with plans to allocate \$1 billion to support African entrepreneurs.

- International interest from foreign investors in clean energy projects in Africa in general and Algeria in particular.
- The vast African market in terms of population density and geographical diversity.

### **3.2 Challenges: The most significant challenges include:**

- Heavy reliance on oil, accounting for up to 95% of export revenues.
- Weak infrastructure, particularly in the southern regions.
- A shortage of specialised human capital, particularly in renewable energy.
- Administrative barriers and lengthy bureaucratic processes.

### **Conclusion:**

In conclusion, our study reveals that establishing entrepreneurial regions is a promising strategic approach to achieving economic diversification in Algeria. The hypotheses have been proven valid, as success is reflected in the ability to link entrepreneurship with regional production identities, provide integrated infrastructure and supportive services, and enhance the economic role of universities through entities such as business incubators and entrepreneurship development centres.

Moreover, the comparative analysis of the two leading experiences in this field has provided valuable lessons in building competitiveness based on networks, relationships and mutual trust among stakeholders, and will continue to do so. Government intervention is crucial in developing infrastructure and linking it with knowledge.

Therefore, we present the most significant findings of our study as follows:

Adopting a smart regional specialisation policy as a general philosophy for inclusive development, based on identifying investment priorities for each region according to its competitive advantages.

Enacting laws that encourage and regulate the establishment of technology-based entrepreneurial regions, granting them administrative autonomy, and applying clear, long-term financial and tax incentives to contribute to the retention and attraction of qualified human capital.

- Strengthening partnerships between universities and industries by embedding them within their regional context and focusing on developing more complex processes and products will lead to differentiated products and techniques with significant added value.

The creation of specialised courses linked to dominant manufacturing activities in the surrounding area will allow these four pathways to be integrated to establish new industrial areas hosting companies of various sizes and specialisations. This will enhance regional economies and industrial activity through mutual enrichment and strategic cooperation mechanisms.

Launching media awareness campaigns to promote a culture of initiative and highlight local success stories in each region.

### Ethical Considerations

This study is based exclusively on secondary data obtained from published reports, official statistics, and academic literature related to entrepreneurship and regional economic development in Turkey, Italy, and Algeria. No human participants, personal data, or confidential information were involved. Therefore, ethical approval from an institutional review board was not required. The authors adhered to the principles of academic integrity, transparency, and proper citation to avoid plagiarism and ensure the reliability of the research.

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### Conflict of Interest

The authors declare that there are **no conflicts of interest** regarding the publication of this paper. The research was conducted independently, and the authors have no financial, professional, or personal relationships that could have influenced the results or interpretation of the study.

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