

Assessing the Effectiveness of the Entrepreneurial Ecosystem for Start-ups in Algeria in Light of Global Indicators

MOUSSOU Hakima^{*}, Faculty of Economic Sciences, Management Sciences and Commercial Sciences, University of Bejaia (Algeria), hakima.moussou@univ-bejaia.dz

AMRI Khira, Faculty of Economic Sciences, Management Sciences and Commercial Sciences, University of Bejaia (Algeria), khira.amri@univ-bejaia.dz

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Abstract:

This study assesses the effectiveness of Algeria's entrepreneurial ecosystem for start-ups through indicator-based benchmarking. Internationally comparable measures especially the Global Innovation Index (2020–2025) are triangulated with national evidence on labeling, incubation, and financing instruments, compensating for Algeria's lack of recent GEM data. Results show partial effectiveness: institutional support, human capital, and parts of ICT infrastructure improved, yet market sophistication, risk finance, and innovation outputs remain weak, constraining scale-up and competitiveness. The paper defines effectiveness as the conversion of enabling conditions into outcomes, proposes a compact monitoring dashboard, and highlights priorities to streamline procedures, widen early-stage funding, and strengthen coordination and university–industry linkages.

Keywords: entrepreneurial ecosystem; start-up; evaluation; effectiveness; global indicators.

Jel Classification Codes : L26 ; O38 ; O43.

^{*} Corresponding author

1. INTRODUCTION

In an era of accelerating technological change and intensified global competition, entrepreneurship—particularly innovation-driven start-ups—has become a central lever for growth, job creation, and competitiveness. Yet start-ups do not emerge in a vacuum: their quality and survival depend on a place-based configuration of institutions, finance, human capital, networks, and market access that jointly shape entrepreneurial outcomes. Accordingly, the entrepreneurial ecosystem approach has gained prominence as an integrative lens for understanding why some territories generate more productive entrepreneurship than others and how policy can strengthen the enabling conditions.

In Algeria, the ecosystem question is especially salient given the need to diversify away from hydrocarbon dependence, reduce graduate unemployment, and accelerate the transition toward a knowledge-based economy. Over the last few years, public authorities have expanded the institutional and financial architecture supporting start-ups (e.g., labeling mechanisms, incubators/accelerators, and dedicated funding instruments). However, the effectiveness of these efforts remains contested because improvements in policy inputs do not automatically translate into strong entrepreneurial outcomes such as scaling, competitiveness, and sustained value creation.

This study addresses the following research problem: to what extent is the Algerian entrepreneurial ecosystem effective when assessed against global entrepreneurship and innovation indicators? The objective is to benchmark Algeria's ecosystem position using internationally recognized indicators, identify major strengths and weaknesses, and derive improvement avenues to support start-up sustainability and scale-up.

A key data limitation is Algeria's absence from recent Global Entrepreneurship Monitor (GEM) datasets (with the latest coverage dating back to 2013). To address this constraint methodologically, the paper relies on alternative internationally comparable indicators and complements them with national institutional evidence (e.g., ecosystem instruments, labeling

mechanisms, and recent regulatory developments affecting start-up finance). The study follows a descriptive–analytical benchmarking design based on secondary data and triangulation across sources rather than econometric testing.

The analysis is guided by one hypothesis: H1 (Effectiveness pattern): Algeria’s entrepreneurial ecosystem performs relatively better in enabling conditions (e.g., institutional support, human capital, and parts of digital/ICT infrastructure) than in entrepreneurial outcomes (notably market sophistication and innovation-related outputs), indicating that improvements in inputs have not yet translated proportionately into high-quality, internationally competitive start-up outcomes.

The remainder of the paper is structured as follows: Section 2 presents the conceptual foundations and links ecosystem conditions to outcomes; Section 3 analyzes Algeria’s ecosystem actors and financing channels and benchmarks its position using global indicators; the conclusion synthesizes findings and proposes targeted policy priorities.

2. Conceptual Foundations of Start-ups and the Entrepreneurial Ecosystem

This section clarifies the core concepts underpinning the analysis. Start-ups are treated as innovation-oriented ventures operating under uncertainty, while entrepreneurial ecosystems are approached as place-based configurations of interdependent actors and conditions that shape the quantity and quality of entrepreneurial outcomes.

2.1. Start-ups: Definition and Key Characteristics

2.1.1. Definition

A start-up is commonly described as a newly created venture with a strong growth orientation, typically built around innovation and experimentation under high uncertainty (Elmekki, 2018). In line with the entrepreneurship literature, condensing the concept is analytically useful: start-ups are temporary organizations searching for a repeatable and scalable business model (Blank & Dorf, 2012, cited in Bekaddour, 2021), and are often initiated through the mobilization of ideas and resources into a new firm (Low & MacMillan, 1988). Importantly, digitization further

reshapes start-up uncertainty, enabling rapid iteration, recombination, and scalable market access, which affects how opportunities are identified and exploited (Nambisan, 2017).

2.1.2. Key characteristics

Compared with traditional firms, start-ups can be characterized by a small set of distinguishing features that are central to ecosystem effectiveness:

1. **Temporariness and experimentation:** start-ups represent an early organizational phase during which the venture tests a value proposition and learns quickly (Djekidel et al., 2021).
2. **Business-model search:** early activities focus on validating a viable model for value creation and capture (Blank & Dorf, 2012, cited in Bekaddour, 2021).
3. **Replicability and scalability:** once validated, the model can be replicated and scaled, allowing rapid growth beyond the initial local market (Beggah, 2023a; Khelil, 2022).
4. **High uncertainty and failure risk:** the model is not guaranteed to be profitable in the short run; failure rates tend to be higher than for conventional firms (Elmekki, 2018).
5. **Digital cost and coordination advantages:** digitization can reduce distribution/transaction costs and speed up iteration, which may improve competitiveness (Djellalameur & Koliel Bengabou, 2024; Nambisan, 2017).

2.1.3. Start-up life cycle

For analytical purposes, the start-up trajectory can be summarized into four broad stages: ideation/validation (problem–solution fit), launch (MVP and early market test), scaling (accelerated growth and organizational structuring), and maturity/exit (stabilization, expansion, acquisition, IPO, or discontinuation) (Torqui Godih, 2019; Deira, 2022). The most fragile phase is often the transition from early traction to scalable organization, where the firm must shift from flexibility to processes, discipline, and governance capable of sustaining growth (Picken, 2017).

2.2. Conceptual framework of the entrepreneurial ecosystem

2.2.1. Definition

Entrepreneurship is not solely an individual act; it is embedded in a territorial configuration of institutions, networks, resources, and culture. Entrepreneurial ecosystems are thus defined as sets of interdependent actors and factors that enable productive entrepreneurship and value creation in a given place (Stam, 2015; Spigel, 2017). From a regional-development perspective, ecosystems overlap with clusters and innovation systems but place entrepreneurs and start-ups at the analytical center, emphasizing the local orchestration of enabling conditions (Malecki, 2018).

2.2.2. Core components (domains) and why they matter for “effectiveness”

To reduce conceptual overlap with the empirical section, we focus here on the ecosystem’s functional domains rather than repeating actor descriptions. Building on widely used models, a parsimonious view highlights domains such as: institutions and governance, culture, finance, human capital, support infrastructure, and market access (Isenberg, 2011; Suresh & Ramraj, 2012). Recent research also emphasizes that ecosystem analysis must distinguish between inputs/conditions, entrepreneurial outputs, and outcomes (e.g., high-quality or “productive” entrepreneurship), and that measurement requires operational indicators rather than descriptive lists (Stam & van de Ven, 2021). In addition, critical reviews warn against overly broad ecosystem definitions and highlight the need to avoid conceptual inflation by clearly specifying boundaries, mechanisms, and metrics—especially when comparing countries using global indicators (Brown & Mason, 2017; Alvedalen & Boschma, 2017).

In this study, ecosystem “effectiveness” is therefore approached as the degree to which Algeria’s ecosystem conditions and support instruments translate into observable outputs/outcomes captured (imperfectly but comparably) by global indicators and complementary national metrics.

3. Methodology

This study adopts a descriptive, indicator-based benchmarking approach to assess the effectiveness of Algeria’s start-up entrepreneurial

ecosystem using internationally comparable measures, complemented by national institutional evidence such as regulations, the start-up labeling mechanism, and public support and financing instruments. This methodological choice is motivated by data constraints, notably the lack of recent standardized survey coverage for Algeria in major entrepreneurship datasets, which limits the use of perception- and activity-based measures and increases reliance on alternative comparable indicators.

Indicators are selected using explicit criteria to reduce arbitrariness: alignment with core ecosystem domains (institutions and governance, finance, human capital, infrastructure/ICT, markets, and innovation outputs), availability for Algeria over multiple years, methodological transparency and cross-country comparability, balance between enabling-condition indicators and output/outcome proxies, and minimal redundancy with clear policy interpretability. The Global Innovation Index is emphasized because it distinguishes inputs from outputs and provides pillar-level diagnostics that help identify “conversion gaps” between strengthened conditions and weaker entrepreneurial and innovation results.

Cross-country comparison is treated cautiously because countries differ structurally in market size, economic structure, institutional maturity, and global integration, which can affect rankings and the pace at which reforms translate into outcomes. Therefore, the results are interpreted as diagnostic and directional rather than causal proof, and are most meaningful when read against structurally closer peers (e.g., Maghreb/North Africa).

A further limitation is the absence of an in-depth case study tracing the pathway from ecosystem instruments to firm-level outcomes. Future research should add at least one embedded case of a labeled start-up that engaged with incubation support and accessed a financing channel (e.g., ASF, bank-backed schemes, or regulated crowdfunding), and then track observable outcomes such as survival over time, customer acquisition, employment, revenue trajectory where available, and export attempts, alongside the administrative, financing, and digital-payment frictions encountered.

4. Algeria's Start-up Entrepreneurial Ecosystem: Reality and Prospects

Algeria's entrepreneurial ecosystem is built on a set of public and private actors that interact to promote the creation, financing, and growth of start-ups. These stakeholders play complementary roles in support provision, regulation, financing, and the promotion of innovation.

4.1 Key Actors in Algeria's Entrepreneurial Ecosystem

Within an entrepreneurial ecosystem, multiple actors play a crucial role in fostering firm development and success. Through interaction and cooperation, they contribute to an environment conducive to innovation and economic growth. In Algeria, start-up ecosystem actors can be divided into two categories: internal actors and external actors.

4.1.1 Internal Actors

Internal actors include factors such as the quality of human capital, the availability of financing mechanisms, and the firm's business model. These elements play a critical role in start-up development.

4.1.1.1 Human Capital

Human capital plays a central role in entrepreneurship as a driver of innovation and value creation through the accumulation of individuals' knowledge, skills, and experience. Strong human capital enhances firm performance, competitiveness, and adaptability to market changes, while supporting informed decision-making and improved risk management—both of which are essential for entrepreneurial success and sustainability. Statistics indicate that Algeria's Human Capital Index in 2020 stood at 0.53.

4.1.1.2 Financing

To establish itself, a start-up seeks a financing mode aligned with the needs of each stage of its life cycle, as it typically exhibits a strongly negative gross self-financing margin during its early years. In addition, start-ups often require substantial investments in specialized equipment, which calls for both equity capital (including the opening of capital) and state subsidies. Once sales are generated, start-ups may face a critical working-capital requirement due to rapid sales growth. In this context, the central challenge is to identify and build a business model that clarifies how value is created, captured, and distributed among stakeholders. In parallel,

selecting an appropriate financing mode is essential.

Among the financing mechanisms available in Algeria are the following:

4.1.1.2.1 Venture Capital

Venture-capital financing of start-ups in Algeria is considered a lever for economic growth and has been supported by new regulations aimed at structuring the ecosystem. Under this financing mode, investors assume risk by providing capital to a firm they do not manage, while also contributing technical expertise and managerial support. They become shareholders, exert a certain degree of control, and typically seek long-term returns—most often through capital gains—by selling their stake at a later stage.

However, Algerian market actors often lack sufficient knowledge and mastery of venture-capital financing. Algeria is generally considered to lag behind its North African neighbors in terms of venture-capital investment, as its local entrepreneurial ecosystem remains relatively nascent compared with countries such as Egypt. Venture-capital investment in start-ups is less developed in Algeria, where investment flows tend to remain concentrated in traditional sectors such as energy (International Trade Administration, 2024). Key venture-capital institutions in Algeria include: FINALEP (Algérienne de Participation), a pioneer in private equity in Algeria, established in April 1991 as a joint-stock company at the initiative of two Algerian banks (BDL and CPA); SOFINANCE Spa (Société Financière d'Investissement, de Participation et de Placement), a public financial institution created at the initiative of the National Council for State Participations (CNPE) and licensed by the Bank of Algeria on 9 January 2001; and El Djazair-Istithmar, a private-equity investment company established in 2009 and approved by the Ministry of Finance since 2010.

In addition, the Algerian Start-up Fund (ASF) is a public venture-capital company created in 2020 through a collaboration between the start-up ministry and six other public banks. It aims to support, assist, and finance entrepreneurs and innovative project holders, and to help them mobilize additional public or private investment funds—provided that the

start-up holds a start-up label and has equity or quasi-equity funding (Bekkal & Khedim, 2022, p. 881).

4.1.1.2.2 Traditional Financing

Traditional financing relies on founders' own funds and conventional bank loans, which are often accompanied by state guarantees. It also includes several public financing schemes established prior to 2020—namely ANGEM, ANSEJ (ANADE), and CNAC—created by the state during the 1990s and 2000s. These schemes offer tailored financial services through various formulas, multiple tax benefits, and support services at different project stages for eligible applicants under each scheme's conditions (Belaïd, 2023, p. 96).

4.1.1.2.3 Crowdfunding

Crowdfunding—also referred to as participatory financing, crowd financing, “2.0 financing”, or social financing—has emerged as an alternative to conventional or traditional sources (financial institutions and banks). It involves raising funds from a large audience via crowdfunding platforms, and it appears to offer an opportunity for financing young entrepreneurs with innovative projects (technological, social, sustainable, and responsible) (Ait Fella & Ait Akkache, 2024, p. 919).

In Algeria, this financing channel has recently moved beyond the “draft” stage toward formal regulation. The Commission d'Organisation et de Surveillance des Opérations de Bourse (COSOB) issued Regulation No. 23-01 (12 April 2023), which sets the licensing, operating, and supervisory conditions for *Conseillers en Investissement Participatif* (CIP), approved by a decision dated 4 September 2023 (Commission d'Organisation et de Surveillance des Opérations de Bourse [COSOB], 2023). In line with this regulatory shift, COSOB granted YINVESTI a provisional authorization as a CIP for 12 months (COSOB, 2024), and later granted a definitive authorization enabling it to manage a dedicated crowdfunding platform (COSOB, 2025).

Accordingly, crowdfunding should now be treated as an emerging but regulated financing channel within Algeria's entrepreneurial ecosystem. However, its effectiveness will depend on practical uptake, investor

protection, and—critically—its integration with digital payments and the broader digital economy (Kameli, 2022, p. 884). Crowdfunding is organized through an online platform that connects contributors with project owners. The first crowdfunding initiatives in Algeria date back to 2013, with the creation of two platforms, notably TWIZA and CHRIKY. A third initiative emerged with NINVESTI in 2019, aiming to support Algerian projects lacking financial resources through traditional channels (Algeria Invest, 2024). The recent COSOB framework and licensing trajectory indicate a transition from early initiatives toward supervised, operational crowdfunding activity (COSOB, 2024; COSOB, 2025).

4.1.2 External Actors

External factors include governmental and support bodies (promotion agencies, ministries), investors (investment funds, business angels), education and research institutions (universities, R&D centers), start-up incubators and accelerators, established firms, business networks and mentors, as well as foreign partners that provide financing, expertise, and international connections.

- **Governmental and para-public bodies:** Agencies such as ANPT (National Agency for the Promotion and Development of Technology Parks) and CNESE (National Economic, Social and Environmental Council) play a role in promoting and supporting entrepreneurship. More broadly, public authorities (ministries, inter-ministerial committees) establish policies and laws to promote innovation and entrepreneurship (Kateb, 2022, p. 1349).
- **Entrepreneurs:** They are at the core of the ecosystem, bringing innovation and adaptability to create and develop start-ups. They often prioritize self-financing due to bureaucratic barriers and limited access to traditional financing.
- **Public authorities and the regulatory framework:** Public authorities show a strong willingness to promote start-ups and adapt the regulatory framework to their specific needs. In particular, Law No. 19-04 (2019) on start-ups, decrees governing incubators, and the

establishment of inter-ministerial committees aim to structure and support the sector. Initiatives also seek to transform start-ups into industrial leaders, notably through tax and customs incentives.

- **Support structures (incubators and accelerators):** These provide mentoring, workspace, and infrastructure to help start-ups accelerate development and innovate. The A-Venture accelerator network—financed notably by Sonatrach—is cited as an example of public infrastructure supporting start-up growth.
- **Universities and research institutions:** They play a crucial role by supplying qualified human resources and innovation capacities needed for start-up development.
- **Large companies:** They can support start-ups by providing access to infrastructure and markets and by enabling innovation partnerships.

4.2 Analysis of Algeria’s Start-up Ecosystem

Analyzing Algeria’s start-up ecosystem first requires a clear understanding of the sector’s current situation. Before examining support mechanisms, involved actors, and innovation dynamics, it is essential to provide an accurate overview of start-ups in Algeria. This approach makes it possible to identify the sector’s main characteristics, its level of development, and the challenges it faces.

4.2.1 Overview of the Start-up Sector in Algeria

The Algerian Start-up Fund (ASF), launched in 2020, constitutes the main public financial lever to support young firms. It is structured around venture capital, financial engineering, and export support (Startup.dz). The state has also implemented a mapping program and a digital guide to register start-ups via the “Startup.dz” platform, with the ultimate objective of reaching 20,000 start-ups by 2029. In addition, the diaspora is being actively mobilized through measures designed to facilitate and support expatriates who wish to invest in or create start-ups in Algeria.

Regarding incubators, the country has more than 104 entrepreneurship development centers and a network of public incubators (notably through Algeria Venture) that supports thousands of start-ups across various sectors such as e-health, agritech, fintech, and others (Beggah, 2023b, p. 642).

4.2.1.1 The Most High-Performing and Promising Start-ups in Algeria

Algeria has a dynamic and diversified start-up ecosystem, ranking second in Africa with approximately 800 active start-ups (La Sentinelle, 2023). Among the most influential start-ups are Yassir, Fatoura by Brainiac, and Tem Tem, among others. Several stand out for their local impact, technological innovation, or international expansion (StartupBlink – Algeria).

- **Yassir:** a ride-hailing service that enables users to book drivers via a smartphone application for safe and reliable travel.
- **Fatoura by Brainiac:** provides comprehensive invoicing, taxation, and SaaS solutions, including effective billing management, management software, invoice tracking, and robust product and client databases, enabling firms to streamline financial processes and improve operational efficiency.
- **Tem Tem:** offers mobility services at fair prices and with enhanced safety.
- **Zawwali:** an e-commerce platform offering a curated selection of technology and fashion brands, providing access to the latest trends and gadgets online with ease.
- **Opticharge:** a B2B technology and logistics platform that connects shippers and carriers in real time, enabling shippers to identify and request transport services efficiently and simplifying logistics management.
- **UbexPay Ltd.:** an innovative technology enabling real-time bacterial detection, transforming traditional monitoring methods that rely on weekly or monthly manual sampling. Unlike conventional laboratory analyses—typically requiring 18 to 72 hours—this solution provides immediate insights, thereby improving safety and monitoring effectiveness.
- **Travis App:** a travel planning platform that simplifies the travel experience through personalized travel guides and inspiring content and narratives.

- **Moufid BI:** offers solutions in accounting, financial analysis, business valuation, and tax consolidation, ensuring accuracy and compliance, and supporting decision-making and growth.
- **3S Pay:** provides advanced payment solutions that strengthen secure identification and ensure the reliability of online transactions, supporting firms' digital transformation through essential fintech services tailored to evolving payment needs.
- **EURL LD Azouaou:** assembles and distributes agricultural tractors, supplying high-quality machinery to farmers.

Table 1. Ranking of the 10 Highest-Performing and Most Promising Start-ups in Algeria (2024)

Start-up	Sector	National Rank	Regional Rank (North Africa)	Rank	Global Rank
Yassir	Transport	1st	3rd		785th
Fatoura Brainiac	Enterprise Technology	2nd	228th		65,087th
Tem Tem	Transport	3rd	230th		65,777th
Zawwali	E-commerce	4th	328th		86,530th
Opticharge	Transport	5th	383rd		96,534th
UbexPay Ltd.	E-commerce	6th	395th		98,673rd
Travis App	Software & Data	7th	398th		99,061st
Moufid BI	Data Analytics	8th	421st		102,230th
3S Pay	Financial Services	9th	456th		107,868th
EURL LD Azouaou	Hardware & IoT	10th	459th		108,071st

Source: Prepared by the authors based on “Startup Ranking Top—Algeria, 2024” data.

While the number of labeled start-ups is a useful proxy for ecosystem activation, it remains an input indicator. A stronger effectiveness assessment requires outcome indicators, notably start-up continuity (survival), discontinuation (failure), and progression toward scaling. In Algeria, an official statement reported that among “more than 1,100” start-ups labeled since 2020, “only about ten” ceased activity, implying a survival rate above 95% (Radio Algérienne, 2026). This result suggests that labeling and associated facilitation mechanisms may be contributing to continuity; however, survival should not be conflated with growth, profitability, or

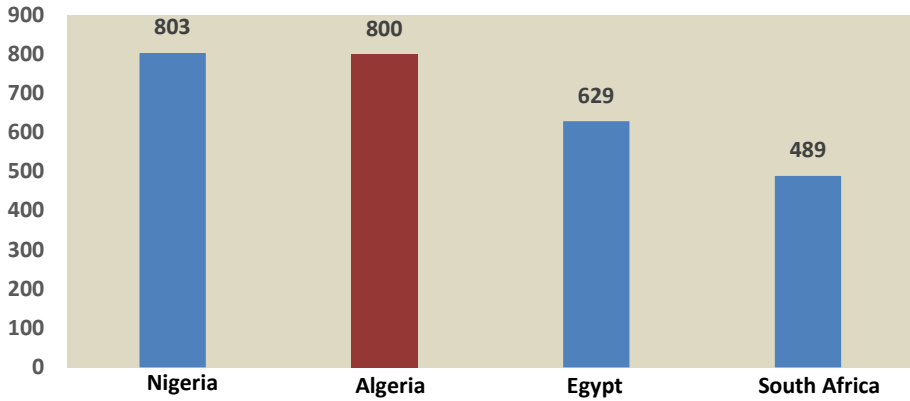
international competitiveness.

Moreover, the survival discussion should be connected to financing, since the Startup Label functions as a gateway to public venture-capital support. The Algerian Start-up Fund (ASF) explicitly links eligibility to the Startup Label and provides post-investment support (ASF, n.d.). In addition, ASF reported having already financed more than 130 start-ups since its creation in 2020 (Radio Algérienne, 2025). Accordingly, future monitoring of ecosystem effectiveness should distinguish between (i) post-label survival and (ii) post-financing survival and performance (revenues, jobs, exports).

Recent regulatory developments also reinforce the relevance of outcome-based monitoring. Executive Decree No. 25-311 (1 December 2025), published in the Official Journal, strengthens the labeling framework and signals a move toward performance criteria and scale-up progression (Journal Officiel, 2025). This shift can support a more rigorous evaluation framework where continuity and scaling become explicit policy targets rather than implicit expectations.

Proposed operational indicators (to complement global indices): (1) survival rate of labeled start-ups after 12/24/36 months; (2) share of labeled start-ups that receive ASF (or other) funding; (3) survival and growth of funded start-ups; (4) transition rate from “Start-up” to “Scale-up”; and (5) causes of discontinuation, explored qualitatively through founder and incubator feedback (financing gaps, administrative delays, market access constraints, digital payment frictions, and skills mismatches).

Figure 2. Leading African countries by number of active start-ups



Source: Startup Ranking 2023.

4.2.2 Position of Algeria's Entrepreneurial Ecosystem in Light of Global Indicators

Algeria's start-up entrepreneurial ecosystem remains under development, characterized by increasing governmental awareness and the introduction of support policies (legislation and tax incentives). However, the ecosystem is often regarded as insufficient, with limited innovation capacity and inadequate adaptability to rapid technological change, resulting in a noticeable gap compared with more advanced countries in terms of technological infrastructure and e-participation.

Although global entrepreneurship indicators place Algeria below the most advanced economies in terms of start-up density and ease of doing business, the country demonstrates potential owing to its willingness to diversify the economy, the emergence of incubators and accelerators, and growing recognition of start-ups' needs. To provide an overall view of entrepreneurial activity in Algeria, we mainly draw on official statistics and data reported by international organizations. The most relevant are presented below:

- **Global Entrepreneurship Monitor (GEM) 2024:** This report highlights trends in entrepreneurial activity, education, and innovation, emphasizing the need to strengthen support systems and integrate Artificial Intelligence (AI) and the Sustainable Development Goals (SDGs) into entrepreneurial strategies. Algeria

is among the countries absent from the GEM consortium’s 2024 ranking. This survey—one of the largest comparative studies of entrepreneurial dynamics worldwide—has not reported data on entrepreneurial activities and attitudes in Algeria since 2013 (Raho & Benchikh, 2024, p. 161).

- **Global Entrepreneurship Network (GEN) 2023:** Algeria reports pronounced entrepreneurial activation (3,426 engagements; 2,187 events), signalling a consolidating—though still emergent—start-up ecology.
- **Global Innovation Index (GII) 2025:** Benchmarking 139 economies, the Index ranks national innovation capacity and maps S&T hubs, foregrounding social-entrepreneurial innovation as an impact conduit.
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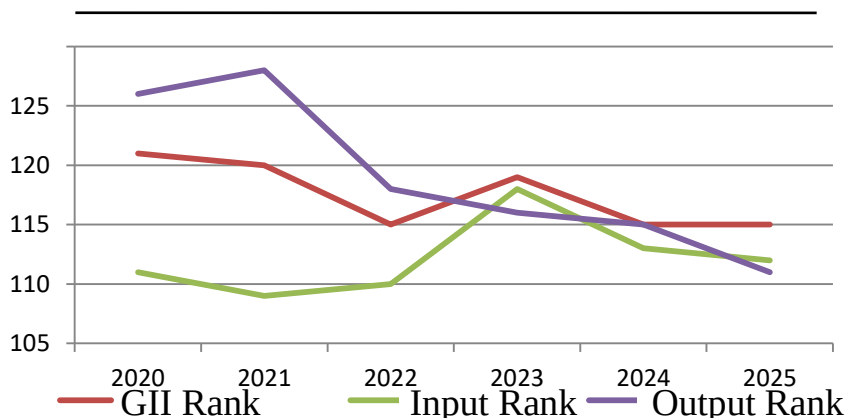
Table 2. Algeria’s Ranking in the Global Innovation Index (GII), 2020–2025

Year	GII Rank	Input Rank	Output Rank
2020	121	111	126
2021	120	109	128
2022	115	110	118
2023	119	118	116
2024	115	113	115
2025	115	112	111

Source: Compiled by the authors based on World Intellectual Property Organization (WIPO) data, 2025.

Algeria ranks 115th out of 139 economies in the WIPO index, gaining four positions compared with 2023.

Figure 3. Algeria’s Ranking in the Global Innovation Index (GII), 2000–2025



Source: Compiled by the authors based on World Intellectual Property Organization (WIPO) data, 2025.

The figure above illustrates changes in Algeria's position in the Global Innovation Index over the 2000–2025 period. Overall, Algeria's ranking appears relatively stable but remains low, reflecting persistent challenges in research, innovation, and technology transfer. Despite some improvements in recent years—particularly following recent economic reforms and the promotion of start-ups—Algeria continues to lag behind several emerging countries and neighboring Maghreb economies. This pattern underscores the need to strengthen public policies that support innovation, improve synergy among entrepreneurial ecosystem actors, and increase investment in research and development.

Table 3. Algeria's Ranking in the Global Innovation Index by Pillar, 2025

No.	Indicateur (FR)	Indicator (EN)	Score	Rank
1	Institutions	Institutions	42.1	89
1.1	Environnement institutionnel	Institutional environment	38.0	104
1.2	Environnement réglementaire	Regulatory environment	30.3	113
1.3	Environnement des affaires	Business environment	58.0	40
2	Capital humain et recherche	Human capital and research	26.9	82
2.1	Éducation	Education	43.2	93
2.2	Enseignement supérieur	Tertiary education	33.7	55
2.3	Recherche et développement (R&D)	Research and development (R&D)	3.8	82
3	Infrastructur	Infrastructure	34.0	97
3.1	Technologies de l'information et de la communication (TIC)	Information and communication technologies (ICTs)	61.3	35

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3.2	Infrastructures générales	General infrastructure	34.5	63
3.3	Durabilité écologique	Ecological sustainability	6.1	133
4	Sophistication du marché	Market sophistication	10.5	138
4.1	Crédit	Credit	4.5	130
4.2	Investissement	Investment	0.5	122
4.3	Commerce, diversification et échelle du marché	Trade, diversification and market scale	26.4	136
5	Sophistication des affaires	Business sophistication	21.6	119
5.1	Travailleurs du savoir	Knowledge workers	21.1	131
5.2	Liens d'innovation	Innovation linkages	26.4	64
5.3	Absorption des connaissances	Knowledge absorption	17.3	124
6	Connaissances et résultats technologiques	Knowledge and technology outputs	11.1	112
6.1	Création de connaissances	Knowledge creation	12.4	75
6.2	Impact des connaissances	Knowledge impact	13.6	126
6.3	Diffusion des connaissances	Knowledge diffusion	7.2	123
7	Résultats créatifs	Creative outputs	10.5	107
7.1	Actifs incorporels	Intangible assets	11.9	97
7.2	Biens et services créatifs	Creative goods and services	0.8	127
7.3	Créativité en ligne	Online creativity	17.6	108

Source: Compiled by the authors based on data available at: <https://www.wipo.int/gii-ranking/en/algeria/section/data-availability>

In terms of these indicators, the areas where Algeria performs relatively better are human capital and research, infrastructure, institutions, and creative outputs. By contrast, weaker performance is observed in market sophistication, knowledge and technology outputs, and the business environment. Education expenditure, gross capital formation, and graduates in science and engineering are among the indicators where Algeria shows comparatively stronger results.

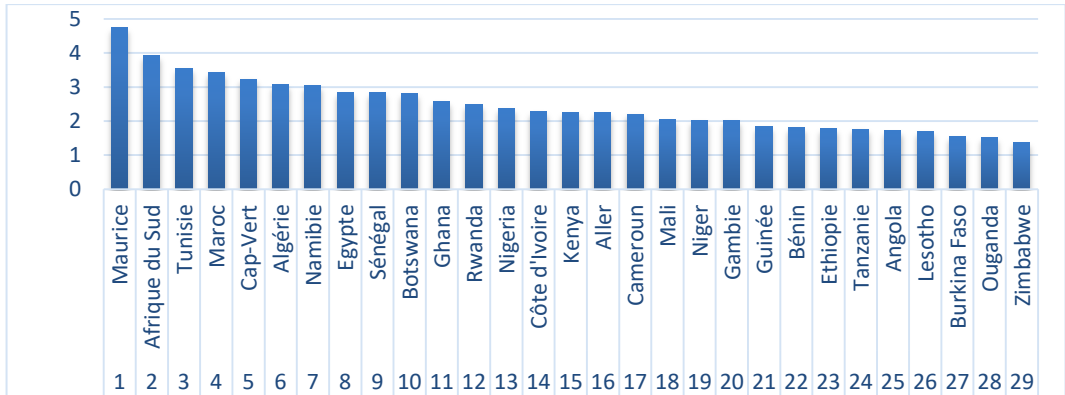
Table 4. Ranking of African Countries According to the African Entrepreneurial Ecosystem Index, 2024

Rank	1	2	3	4	5	6	7	8	9	10
Country	Mauritius	South Africa	Tunisia	Morocco	Cabo Verde	Algeria	Namibia	Egypt	Senegal	Botswana
Score	4.73	3.91	3.55	3.43	3.23	3.06	3.05	2.84	2.84	2.80
Rank	11	12	13	14	15	16	17	18	19	20
Country	Ghana	Rwanda	Nigeria	Côte d'Ivoire	Kenya	Aller	Cameroon	Mali	Niger	Gambia
Score	2.57	2.48	2.37	2.28	2.24	2.24	2.20	2.04	2.01	2.00
Rank	21	22	23	24	25	26	27	28	29	

Country	Guinea	Benin	Ethiopia	Tanzania	Angola	Lesotho	Burkina Faso	Uganda	Zimbabwe
Score	1.83	1.82	1.77	1.76	1.72	1.69	1.53	1.52	1.38

Source: Compiled by the authors based on data available at: <https://www.wipo.int/gii-ranking/en/algeria/section/data-availability>

Figure 3. Algeria's Position in Africa in Terms of the African Entrepreneurial Ecosystem Index



Source: Compiled by the authors based on data available at: <https://www.wipo.int/gii-ranking/en/algeria/section/data-availability>

4.3 Challenges and Prospects for Algeria's Start-up Entrepreneurial Ecosystem

The matrix analysis highlights the strengths of Algeria's entrepreneurial ecosystem, primarily the political will and commitment of public authorities, reflected in the implementation of a national strategy (2020–2024) designed to facilitate the transition from a rent-dependent economy vulnerable to fluctuations in oil prices to a more sustainable economy in which start-ups serve as a key engine of economic development.

This strategic reorientation has been operationalized through policy and programmatic instruments, with the ministry spearheading ecosystem events to institutionalize stakeholder coordination, elicit project proposals and binding constraints, and translate feedback into corrective measures. Yet ecosystem functionality remains structurally constrained by ICT deficits (penetration, bandwidth) and the incomplete diffusion of e-payments, reflecting persistent frictions in financial-sector digitization. In addition,

existing financing programs (particularly earlier schemes) do not adequately match start-ups' financing needs. It is therefore essential to establish a regulatory framework that can invigorate the venture-capital industry—through instruments such as crowdfunding and business-angel financing—thus offering mechanisms better aligned with start-ups' increasing requirements. Moreover, it is necessary to address the reluctance of a large share of project holders toward certain currently available financing options for cultural and religious reasons, by leveraging Islamic finance and drawing on international experiences that have applied Islamic finance principles to the funding of start-ups.

The concentration of incubators and accelerators around the capital represents another drawback affecting young project holders in other cities—particularly in inland and southern regions given the country's vast territory. It is therefore important to account for this factor and promote the establishment of regional economic councils (ideally in each wilaya) bringing together all start-up ecosystem actors, thereby ensuring proximity and accessibility for project holders, in view of the crucial role played by incubation and acceleration structures in supporting and monitoring start-ups. Sustained economic emergence hinges on stable macroeconomic fundamentals and the scaling of start-ups, which catalyze innovation and can reconfigure markets and incumbent strategies. Evidence from successful ecosystems underscores the centrality of coherent public support, public–private coordination, university–industry research linkages, active angel investment, and dense incubation infrastructure.

4.3.1 Main Challenges of the Entrepreneurial Ecosystem in Algeria

Despite ongoing reforms and the multiplication of start-up support initiatives, Algeria's entrepreneurial ecosystem still faces several obstacles:

- Limited access to financing, particularly for young innovative entrepreneurs at the early stage;
- Administrative complexity and slow procedures related to business creation and management;
- Lack of coordination between public and private actors, hindering

- coherent and effective policy implementation;
- Weak entrepreneurial culture and fear of failure among young graduates;
 - Insufficient innovation infrastructure, notably incubators, accelerators, and regional technology spaces;
 - Mismatch between university training and market needs, limiting the entrepreneurial and managerial skills required for start-up success.

5. CONCLUSION

This study evaluated the effectiveness of Algeria's start-up entrepreneurial ecosystem through a descriptive–analytical benchmarking approach using internationally comparable indicators complemented by national institutional evidence. The results suggest a partial effectiveness profile: Algeria has strengthened ecosystem activation and several enabling conditions (policy attention, support initiatives, and parts of the ICT environment), yet persistent constraints continue to limit higher-quality entrepreneurial outcomes—particularly finance and market sophistication, bureaucratic frictions, and uneven territorial access to support infrastructure. Consequently, improvements in inputs do not yet translate proportionately into stronger innovation outputs, scaling, and international competitiveness.

Scientific contribution. The paper contributes by (i) framing ecosystem effectiveness explicitly as the translation of enabling conditions into outcomes (rather than a descriptive inventory of actors), (ii) addressing data constraints (including limited GEM coverage) through triangulation between global indices and national institutional signals, and (iii) proposing practical monitoring indicators that complement global rankings—especially indicators distinguishing survival from scale-up (e.g., post-label and post-financing survival, transition toward scale-up, and qualitative drivers of discontinuation).

Policy priorities emerging from this diagnosis include streamlining administrative procedures, widening early-stage financing and risk-capital channels (including regulated crowdfunding where applicable and stronger integration with digital payments), improving coordination across

ecosystem actors, strengthening entrepreneurship education and digital/managerial skills, and reinforcing university–industry linkages for innovation and commercialization. Finally, ecosystem governance should shift toward outcome-based monitoring using a compact dashboard of indicators that tracks performance over time and across regions.

A promising next step is to conduct a single focused case study (one labeled and funded start-up or one incubator–funding pathway) to document the causal mechanisms linking support instruments to outcomes (survival, growth, and market access) and to validate the proposed monitoring indicators.

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