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WHERE DIGITAL & BUSINESS BECOME HUMAN

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**1st INTERNATIONAL CONFERENCE
ON COMPUTER SCIENCES & MANAGEMENT TOUCHPOINTS,
WHERE DIGITAL AND BUSINESS BECOME HUMAN!**
26-27 JUNE, 2025 TIRANA, ALBANIA



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THE ALBANIAN INNOVATION ECOSYSTEM: POLICIES, PARTNERSHIPS, AND THE FUTURE OF ENTREPRENEURSHIP

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Abstract

The Albanian innovation ecosystem is undergoing rapid transformation, marked by the emergence of a formalised and increasingly interconnected startup landscape. This paper provides a comprehensive mapping of the ecosystem and analyses the structural dynamics that underpin its growth. Drawing on qualitative analysis and multi-source data, the study explores the interplay between key actors—including startups, corporates, academia, consulting firms, investors, public institutions, and support structures such as incubators and accelerators.

Since 2020, Albania has registered over 2,000 startups, with an average annual growth rate of 30%. Government-backed initiatives have played a pivotal role, with approximately €8.5 million disbursed in seed funding through dedicated grant schemes. The paper examines how these players collaborate through strategic linkages and how national policies and programs—such as the Startup Law and innovation support mechanisms—have created a more enabling environment for entrepreneurship.

By examining emerging patterns of cooperation, institutional support, and policy innovation, this study offers new insights into the conditions necessary for scaling early-stage ecosystems. Particular attention is paid to recognition mechanisms, opportunities for regional integration, and the evolving roles of diaspora and academia. The findings contribute to broader discussions on innovation policy in small transitioning economies and highlight Albania's potential as a regional hub for entrepreneurship.

Keywords: Innovation, Government Policies, Entrepreneurship, Startups

I. INTRODUCTION

In recent years, Albania has embarked on a strategic transformation to position itself as a competitive, innovation-driven economy. This trajectory reflects a broader global shift, where the digital revolution is reconfiguring economic paradigms and emphasising the centrality of entrepreneurship, technological innovation, and knowledge creation as drivers of long-term growth and resilience (Mazzucato, 2013; Autio et al., 2018). Transitioning from traditional development models rooted in resource-based expansion, Albania is increasingly embracing a knowledge-based economy characterised by agility, creativity, and inter-sectoral collaboration (Porter, 1998; OECD, 2024).

The emergence of a dynamic startup and innovation ecosystem is both a symptom and a strategy of this transformation, underpinned by explicit governmental efforts to institutionalise innovation as a core pillar of economic policy. Since 2020, more than 2,000 startups have been formally registered, with an estimated annual growth rate of 30% (Startup Albania, 2024). These ventures span a diverse array of sectors—including fintech, agritech, creative industries, and green technologies—demonstrating the potential for inclusive, innovation-led development (European Commission, 2023).

This paper offers a comprehensive examination of the Albanian innovation ecosystem, mapping the evolving relationships among key stakeholders: startups, investors, corporates, academic institutions, public agencies, and support structures such as incubators and accelerators. Special emphasis is placed on the catalytic role of government-led initiatives—such as the Startup Law (2022), the Strategy for the Development of Innovative Entrepreneurship (SDIE), and targeted grant mechanisms—which have been instrumental in fostering collaboration, de-risking early-stage innovation, and integrating Albania into broader European innovation frameworks (Isenberg, 2010; Etzkowitz & Leydesdorff, 2000).

Through this analysis, the study identifies the strategic enablers that have contributed to the country's innovation momentum, the persistent structural barriers—such as funding gaps and institutional fragmentation—and the forward-looking policy directions necessary to scale and sustain ecosystem development. As Albania deepens its EU integration process, enhancing its innovation infrastructure will be critical not only for convergence with European standards but also for leveraging its demographic potential, digital transformation efforts, and diaspora networks to catalyse a globally connected entrepreneurial future (OECD, 2022; World Bank, 2024).

II. CONCEPTUAL FRAMEWORK

The concept of an innovation ecosystem has gained significant scholarly and policy attention over the past two decades as a framework for understanding how innovation emerges, evolves, and scales within complex, multi-actor environments (Autio et al., 2018; Jackson, 2011).

An innovation ecosystem is not limited to startups or isolated R&D institutions; rather, it encompasses a dynamic constellation of actors—such as firms, universities, government bodies, civil society organisations, investors, and intermediaries—whose structured interactions facilitate the creation, diffusion, and commercialisation of knowledge and technology (OECD, 2024; Isenberg, 2010).

The performance of such ecosystems depends not only on the effectiveness of individual participants but on the density, quality, and reciprocity of their relationships (Spigel, 2017). Effective ecosystems exhibit high levels of connectivity, collaborative trust, and institutional learning, which generate adaptive capacity and resilience in the face of shifting technological and market dynamics (Holling, 2001).

In this study, the Albanian innovation ecosystem is examined through the lens of systems theory and cluster-based development models (Porter, 1998; Etzkowitz & Leydesdorff, 2000). These theoretical perspectives underscore the systemic and co-evolutionary nature of innovation, highlighting features such as feedback loops, path dependency, and critical mass. The Albanian ecosystem, while still nascent, reveals characteristics of an evolving system shaped by policy interventions, economic liberalisation, social norms, and the country's trajectory toward EU integration (European Commission, 2023).

II.1 Policy and Institutional Infrastructure

A strong enabling environment—comprising legal, institutional, and financial instruments—is foundational to any innovation ecosystem (Mazzucato, 2013). In Albania, the post-2020 period has seen the formal institutionalisation of innovation as a policy priority. Key milestones include the adoption of the Startup Law (2022), which legally defines startups and introduces tax incentives, social security exemptions, and streamlined registration procedures. These are further reinforced by the Strategy for the Development of Innovative Entrepreneurship (SDIE) 2024–2030, which aligns national innovation priorities with EU strategies such as the Green Deal and Digital Agenda (Ministry of Economy, 2023).

The establishment of Startup Albania, under the Ministry of Entrepreneurship, marks a shift toward implementation-focused governance. As both a funding body and ecosystem coordinator, Startup Albania reflects principles of agile public management and network orchestration (World Bank, 2024). Complementary national frameworks—such as the Digital Agenda 2022–2026, the National Strategy for Scientific Research and Innovation 2023–2030, and the Business Investment Development Strategy (BIDS)—aim to mainstream innovation across multiple policy domains. However, coordination challenges persist (OECD, 2022).

Albania's participation in EU programs such as Horizon Europe, Erasmus+, and EU4Innovation has introduced benchmarking mechanisms and external funding, enabling the country to overcome some early-phase ecosystem constraints (European Commission, 2023; RCC, 2022).

II.2 Entrepreneurial and Startup Activity

Startups are widely recognised as catalysts of innovation, contributing to job creation, technological upgrading, and market diversification (Isenberg, 2010). Since 2020, Albania's entrepreneurial landscape has gained momentum, driven by a young population, increasing digital literacy, and targeted public support schemes. By 2024, over 540 startups and ecosystem enablers had received financial and technical support, with 68% operating in knowledge-intensive sectors such as fintech, ICT, agritech, and creative industries (Startup Albania, 2024).

Notably, the Diaspora Engagement Window within SDIE has facilitated the return of Albanian founders from abroad, injecting international networks, capital, and managerial experience into the ecosystem. Gender inclusivity is also improving: women comprised 43% of 2024 grant applicants, aligning with broader EU gender equity targets (OECD, 2024).

To address geographic disparities, the government plans to launch Regional Innovation and Technology Centres (RTICs) and expand Smart Labs across universities. These initiatives aim to democratise access to innovation infrastructure, especially outside Tirana, Albania's dominant tech hub.

II.3 Support Structures and Collaborative Networks

The "connective tissue" of innovation ecosystems consists of intermediaries such as incubators, accelerators, mentorship programs, and innovation festivals. In Albania, support structures remain fragmented but are evolving through both public and university-led platforms. Initiatives such as the U-Start Accelerator and the Metropolitan Incubator illustrate early models of cross-sectoral collaboration (INSTAT, 2023).

However, systemic collaboration remains limited. Technology Transfer Offices (TTOs) are still nascent or absent in public universities, and mechanisms for research commercialisation are underdeveloped. While corporate engagement is weak, examples like Raiffeisen Bank's fintech pilot programs and Vodafone Albania's digital skills initiatives suggest a growing appetite for open innovation models.

Importantly, Albania's involvement in regional innovation frameworks, such as the Smart Specialisation Strategy for the Western Balkans, positions the country within a transnational ecosystem, enabling it to compensate for local market constraints through knowledge and capital mobility (RCC, 2022).

II.4 System Dynamics: Feedback, Density, and Learning

Building on innovation systems theory, the Albanian ecosystem can be seen as an adaptive system characterised by iterative feedback and emergent learning. The relatively low incidence of university spin-offs, for example, reflects structural disconnects between academia, industry, and public institutions (Etzkowitz & Leydesdorff, 2000). High-performing ecosystems display institutional memory, critical mass, and feedback channels that drive continuous improvement (Spigel, 2017; Startup Genome, 2023).

Some of these elements are beginning to emerge in Albania. Startup Albania's Annual Report and its partnership with Startup Genome provide nascent evidence base for policy refinement. Albania's move from an "activation" to a "globalisation" phase—following the Startup Genome lifecycle model—will require investment in infrastructure, long-term governance continuity, and the development of risk-sharing finance mechanisms.

III. METHODOLOGY

This study adopts a qualitative research design grounded in exploratory case analysis and ecosystem mapping to capture the structure, dynamics, and policy dimensions of Albania's innovation ecosystem. The methodological approach is rooted in systems thinking and actor-network theory (Latour, 2005; Carlsson et al., 2002), enabling the examination of relationships among institutional actors, regulatory frameworks, and knowledge flows. This design is particularly well-suited to emerging innovation ecosystems where quantitative data may be limited, and contextual factors are key to understanding systemic evolution (Yin, 2014).

III.1 Data Sources and Collection

Data were collected from a combination of primary and secondary sources to ensure triangulation and enhance the credibility of findings (Denzin & Lincoln, 2011). These include:

- Government documents and strategies, such as the Startup Law (2022), the Strategy for the Development of Innovative Entrepreneurship (SDIE), and national development plans related to digital transformation and scientific research.
- Reports from international organisations, including the European Commission, GIZ, RISI Albania, and the World Bank, which offer policy assessments, benchmarking data, and strategic recommendations.
- Startup ecosystem databases and platforms, such as Startup Albania, YUNUS Albania, and Tirana Incubator, provide updated metrics on registered startups and support initiatives.

- Materials from innovation support organisations: including Coolab, TechSpace, ICT Hub, and Protik, which offer insights into incubator/accelerator performance, mentorship programs, and innovation events.

In addition, over a dozen semi-structured interviews and roundtable discussions were conducted with stakeholders, including startup founders, public officials, accelerator managers, and representatives from academia and civil society. Interview protocols focused on identifying perceived gaps, collaboration patterns, and institutional bottlenecks.

III.2 Ecosystem Mapping

The ecosystem was mapped by grouping actors into six broad categories, consistent with existing innovation ecosystem frameworks (Spigel, 2017; Stam, 2015):

- Public institutions (e.g., ministries, agencies, municipalities),
- Startups and entrepreneurs (the primary agents of innovation),
- Support organisations (e.g., incubators, accelerators, co-working spaces),
- Finance providers (banks, public funds, angel investors, and VCs),
- Universities and research centres, and
- Enablers (e.g., consultants, NGOs, and event organisers).

This mapping allowed the identification of structural gaps, resource flows, and network density, helping visualise how ideas, capital, and talent circulate within the ecosystem.

III.3 Program and Policy Analysis

To assess the effectiveness of Albania's innovation governance, the study examined key public programs, including:

- The Innovation Voucher Scheme is designed to subsidise R&D and technology adoption.
- The Startup Grant Scheme, which distributed over €8.5 million in seed funding between 2020 and 2023.
- The Entrepreneurship Support Fund is aimed at capacity-building and technical assistance.
- EU programs such as *Horizon Europe* and *Erasmus+* provide international benchmarking, capacity-building, and co-financing opportunities.

These programs were analysed with respect to their design, funding mechanisms, target groups, and alignment with broader innovation policy objectives (OECD, 2022; Mazzucato, 2013).

III.4 Performance Indicators

To evaluate progress and ecosystem maturity, the study employed performance indicators, including:

- Number of startups registered annually,
- Average annual growth rate of startup activity,
- Volume and source of funding (public vs. private),
- Number and type of innovation-related events and initiatives,
- Participation of Albanian startups in regional and European innovation programs.
- Where possible, indicators were contextualised using regional benchmarks and ecosystem lifecycle models (Startup Genome, 2023).

III.5 Limitations

This study does not employ econometric modelling or counterfactual analysis due to the limited availability of time-series financial data and startup-level metrics. Instead, it focuses on observable trends, actor interactions, and stakeholder perceptions. While this qualitative approach may not yield definitive causal relationships, it provides a robust, multi-perspective view of Albania's innovation landscape, especially relevant in early-stage ecosystems where institutional dynamics are still forming (Isenberg, 2010; Spigel & Harrison, 2018).

IV. DISCUSSIONS

The findings of this study affirm that Albania's innovation ecosystem has entered a formative yet increasingly structured phase, characterised by rising institutional awareness, expanding startup activity, and emerging multi-actor coordination mechanisms. While the ecosystem remains in an early stage of development compared to regional counterparts, it exhibits many of the foundational elements of more mature systems: dedicated legal frameworks, targeted public programs, and a nascent yet growing support infrastructure (OECD, 2024; European Commission, 2023).

From a policy standpoint, Albania's progress has been driven by the adoption of key instruments, such as the Startup Law (2022), the National Strategy for Science, Technology and Innovation, and funding programs, including the Innovation Voucher Scheme and the Startup Grant Scheme. These initiatives have helped embed innovation into the national economic narrative, positioning entrepreneurship as a mechanism for modernisation, employment generation, and competitiveness in both EU and global markets (Mazzucato, 2013; Isenberg, 2010).

Over €8.5 million has been disbursed in seed grants since 2020, supporting the registration of approximately 2,000 startups—a trend reflecting a 30% annual growth rate. However, as the ecosystem transitions from activation to consolidation, the challenges it faces become more nuanced: from startup formation to scaling, from policy intent to effective implementation, and from fragmented activity to systemic coordination (Startup Genome, 2023).

The analysis highlights several structural features that define the current configuration of Albania's innovation ecosystem:

- **Fragmented but active support structures:** Incubators, accelerators, and mentoring platforms such as *TechSpace*, *Coolab*, and the *Tirana Incubator* have proliferated, playing an essential role in early-stage venture development. However, most of these operate under short-term project funding, often donor-dependent, and lack institutional continuity. The absence of a national umbrella coordination platform limits ecosystem learning, reduces efficiency, and inhibits long-term scalability (Spigel, 2017).
- **Growing public-sector engagement, but limited private investment:** The ecosystem has been mainly state-driven, with minimal participation from venture capitalists, angel investors, or corporate investors. Financial flows remain grant-based and unstructured, echoing trends found in other transition economies (OECD, 2022). Without blended finance instruments or co-investment models, Albania risks stalling innovation at the prototyping stage (Murray et al., 2012).
- **Underutilised role of academia:** Albania's universities and research centres remain peripheral to the startup ecosystem. The lack of functional Technology Transfer Offices (TTOs), intellectual property support, and university-based incubators hampers the commercialisation of research and reduces the ecosystem's absorptive capacity (Etzkowitz & Leydesdorff, 2000; World Bank, 2024).
- **Policy momentum meets implementation gaps:** Despite strong strategic intent, implementation remains inconsistent. Stakeholder interviews highlighted delays in fund disbursement, limited technical assistance, and regulatory ambiguities that create uncertainty for ecosystem actors. Monitoring and evaluation frameworks are underdeveloped, constraining policy responsiveness and learning (Drahokoupil & Myant, 2019).

Nonetheless, Albania holds distinct comparative advantages: a young, digitally literate population, growing diaspora engagement, improved digital infrastructure, and access to European cooperation platforms such as Horizon Europe and Erasmus+. These can serve as launchpads for scaling ecosystem maturity if properly leveraged (European Commission, 2023; RCC, 2022).

V. CONCLUSIONS AND RECOMMENDATIONS

Albania's innovation ecosystem stands at a strategic inflexion point. It has moved beyond sporadic initiatives to a phase of structural consolidation, supported by enabling policies and increasing entrepreneurial activity. However, sustaining this momentum will require more than policy

articulation—it demands institutional coherence, financial system diversification, and cross-sectoral governance mechanisms.

If Albania successfully navigates this transition, it could position itself as a regional innovation hub—particularly in high-potential sectors such as agritech, creative industries, digital services, and green technology. By embracing systemic innovation thinking and fostering a culture of experimentation and collaboration, Albania can not only catch up to regional peers but potentially leapfrog into global innovation networks.

To move forward, the study identifies five strategic recommendations:

- **Consolidate ecosystem governance:** Establish a national innovation coordination body or task force to improve alignment across ministries, local government, academia, and the private sector. This entity should oversee the implementation of the Startup Law, maintain a live ecosystem database, and regularly convene stakeholders.
- **Mobilise private capital through risk-sharing instruments:** Develop blended finance mechanisms—including seed equity co-investment funds, convertible grants, and public-private venture partnerships. Albania can draw lessons from EU member states that have successfully used government-backed financial instruments to catalyse private sector participation (Murray et al., 2012; EIF, 2023).
- **Strengthen startup support infrastructure:** Transition incubators and accelerators from donor-funded projects to institutionalised programs with performance-based funding models. Forge partnerships with international networks like EIT Digital and European Business Network (EBN) to enhance service quality and cross-border exposure.
- **Deepen academia - entrepreneurship linkages:** Incentivise university-industry collaboration through competitive grants, joint research commercialisation, and student startup funds. Establish TTOs and IP protection offices to facilitate spinouts and patent activity, crucial for innovation capacity building (Etzkowitz & Zhou, 2017).
- **Improve data and monitoring systems:** Design and implement a national startup and innovation dashboard to track real-time indicators, including funding flows, firm survival rates, employment generation, and innovation outputs. This data will be critical for evidence-based policymaking and benchmarking against regional peers (Startup Genome, 2023).

REFERENCES

- Autio, E., Nambisan, S., Thomas, L. D. W., & Wright, M. (2018). Digital affordances, spatial affordances, and the genesis of entrepreneurial ecosystems. *Strategic Entrepreneurship Journal*, 12(1), 72–95.
- Balkan Barometer. (2022). *Balkan Barometer – Business opinion 2022*.
<http://www.rcc.int/download/docs/Balkan%20Barometer%202022%20-%20BO.pdf/56acb2cb729b5f1a74308ea7052bda10.pdf>
- Carlsson, B., Jacobsson, S., Holmén, M., & Rickne, A. (2002). Innovation systems: Analytical and methodological issues. *Research Policy*, 31(2), 233–245.
- Denzin, N. K., & Lincoln, Y. S. (2011). *The Sage handbook of qualitative research* (4th ed.). SAGE Publications.
- Drahokoupil, J., & Myant, M. (2019). The political economy of state-driven innovation in Eastern Europe. *Journal of Innovation & Development*, 9(2), 121–139.
- European Investment Fund. (2023). *The role of public financial institutions in fostering startup ecosystems in Europe*.
- Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and "Mode 2" to a Triple Helix of university–industry–government relations. *Research Policy*, 29(2), 109–123.
- Etzkowitz, H., & Zhou, C. (2017). *The Triple Helix: University–industry–government innovation and entrepreneurship*. Routledge.
- European Commission. (2023). *Commission staff working document: Albania 2023 report*.
<https://neighbourhood-enlargement.ec.europa.eu>
- European Commission. (2023). *European Innovation Scoreboard: Albania country profile*.
https://ec.europa.eu/assets/rtd/eis/2023/ec_rtd_eis-country-profileal.pdf
- Holling, C. S. (2001). Understanding the complexity of economic, ecological, and social systems. *Ecosystems*, 4(5), 390–405.
- INSTAT. (2023). *Statistics on small and medium enterprises, 2023*.
<https://www.instat.gov.al/media/11356/results-on-sme-2021.pdf>
- INSTAT. (2023). *Tourism statistics*. <https://www.instat.gov.al/en/themes/industry-trade-and-services/tourism-statistics>
- INSTAT. (2024). *Statistics on small and medium enterprises, 2022*. Tirana.
- Isenberg, D. J. (2010). How to start an entrepreneurial revolution. *Harvard Business Review*, 88(6), 40–50.

- Jackson, D. J. (2011). What is an innovation ecosystem? National Science Foundation.
- Latour, B. (2005). *Reassembling the social: An introduction to actor-network theory*. Oxford University Press.
- Ligj Nr. 43/2022, Për zhvillimin e ndërmarrjeve mikro, të vogla e të mesme. (2024, October 11). <https://aida.gov.al/wp-content/uploads/2024/02/ligj-nr.-43-dt.-21.4.2022.pdf>
- Mazzucato, M. (2013). *The entrepreneurial state: Debunking public vs. private sector myths*. Anthem Press.
- Ministry of Economy, Culture and Innovation. (2023). *Business development and investment strategy 2021–2027*. https://www.investment.com.al/wp-content/uploads/2021/07/EN_Draft-BIDS-Presentation.pdf
- Murray, G., Cowling, M., Liu, W., & Kalinowska-Beszczyńska, O. (2012). *A study of the impact of EIF support to the venture capital industry*. European Investment Fund Research Series.
- OECD. (2022). *OECD tourism trends and policies 2022*. OECD Publishing. <https://doi.org/10.1787/a8dd3019-en>
- OECD. (2022). *SME policy index: Western Balkans and Turkey*. https://www.oecd-ilibrary.org/development/sme-policy-index-western-balkans-and-turkey-2022_b47d15f0-en
- OECD. (2024). *Western Balkans competitiveness outlook 2024: Albania*. OECD Publishing. <https://doi.org/10.1787/541ec4e7-en>
- Porter, M. E. (1998). Clusters and the new economics of competition. *Harvard Business Review*, 76(6), 77–90.
- Regional Cooperation Council. (2022). *Smart specialisation strategy for the Western Balkans*.
- Spigel, B. (2017). The relational organisation of entrepreneurial ecosystems. *Entrepreneurship Theory and Practice*, 41(1), 49–72.
- Spigel, B., & Harrison, R. (2018). Toward a process theory of entrepreneurial ecosystems. *Strategic Entrepreneurship Journal*, 12(1), 151–168.
- Stam, E. (2015). Entrepreneurial ecosystems and regional policy: A sympathetic critique. *European Planning Studies*, 23(9), 1759–1769.
- Startup Albania. (2024). *Annual ecosystem report*. (Internal government source referenced in the paper.)
- Startup Genome. (2023). *Global Startup Ecosystem Report 2023*. <https://startupgenome.com>

State Minister for Entrepreneurship and Business Climate. (2025).

<https://www.sipermarrja.gov.al/strategjite/>

World Bank. (2024). *World development indicators*. DataBank.

<https://databank.worldbank.org/source/world-development-indicators>

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). SAGE Publications.