

The evolution of the Greek Digital Start-Up Ecosystem (2019-2025)

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ABSTRACT: *The review examines the changing landscape and evolution of the Greek Digital Start-Ups Ecosystem. For almost a decade (2008-2018) Greece was mostly known as an economy in the flirting with destruction and even risking an exit from the Euro-zone. After 2019, the COVID pandemic crisis spread its impact on the Greek and international economy following by trade wars and international conflicts in Middle East and Ukraine. However the Greek Start-Up ecosystem was actually born in the midst of continuous crises and keeps growing ever since. As an ecosystem build in troubling times, it was a noisy and healthy baby, which turned many obstacles into growth opportunities in order to survive.*

The paper identifies therole of both central government and private initiatives for the evolution of the Greek Start-Up Ecosystem between 2019 and 2023.

KEY WORD: *Start-Up, Ecosystem, Innovation, Greece, Evolution*

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I.INTRODUCTION AND LITERATURE REVIEW

Latest studies consider entrepreneurship ecosystems to be critical for the success of entrepreneurs, especially when it comes to digital entrepreneurship. Bouncken & Kraus (2022) through their comprehensive review of the literature on business incubators and business accelerators provide highlight the need to focus not only on the structure and services of business incubators and business accelerators, but also on the start-ups themselves and the management capabilities of business accelerators and incubators. The ability to start and run one's own business is considered vital for a vibrant economy. Scholars and researchers recommend the implementation of a business incubation framework by governments, politicians, institutions, and incubation managers to promote successful entrepreneurship and economic growth" (Usman et al., 2024, p.18).

"However, the global financial crisis in 2008 seriously impacted Greece. As a result, Greek GDP decreased sharply from 2008 to 2013, pushing the country's debt-to-GDP ratio to excessively high levels. Despite austerity measures and bailouts, debt levels remained high, exceeding 180% of GDP at their peak." (Gkiosis et al., 2024, p. 352). Greece's economic environment has improved significantly in 2022. In the Global Competitiveness Index, Greece ranked 57th in 2018, rising to 46th in 2021 and 47th in 2022. However, there is a need for improvement, particularly in terms of European standards. Regarding the Digital Economy and Society Index (DESI), Greece continues to rank 25th out of the 27 EU countries. In all the individual sub-indices that make up the DESI, Greece ranks below the average, although it has shown significant improvement between 2018 and 2023.

Past research (Spyropoulos (2019a; 2019b; 2020a; 2020b); Spyropoulos et al, (2022; 2023;2024)) highlight the challenges for Digital Greek Start-Up with the specific time period, highlighting both changes in the Start-Ups and the changing business environment of this period for Greece. Furthermore, Dritsas et al. (2022), provide detailed description of the Greek Start-Up ecosystem during this period, with special references to selected Start-Ups and the establishment of Elevate Greece as a support and promotion mechanism. Furthermore, the authors discuss the evolution of the financial tools available for Greek Start-Ups. More specifically, the establishment of the JEREMIE "Early Stage ICT Venture Capital Fund and Seed / Technology Transfer ICT Fund" in August 2012 enabled the creation of 4 Venture Capital Funds, while the creation of EquiFund in 2018 enabled the financing support of more than 129 Start-Ups in the first quarter of 2022.

This created a structured way for private investors to collaborate with Start-Ups and Venture Capital companies. In addition the development of HEBAN (Hellenic Business Angels Network) and an ever increasing number of Start-Up Accelerators (e.g. StartSmart, EGG, Thermi) as well as organized efforts from Greek Diaspora (Reload Greece, Hellenic Initiative, Stelios Young Entrepreneurial Awards, Venture Garden) bridged

the gap between entrepreneurial education and Greek business culture, offering not just financial support but hands-on experience and mentoring for the Greek Start-Ups.

The Greek startup ecosystem remains small compared to other European countries and the U.S. and has not yet reached a satisfactory level of maturity. However, it should be noted that Greek startups have managed to thrive in a high-risk business environment during a prolonged recession, both in terms of duration and in terms of loss of Gross Domestic Product, and a number of them have become truly successful.

The Dianeosis study (2022, p. 15) on the Greek startup ecosystem in 2022 offers revealing insights into the Greek market. “Based on the quantitative survey, which draws on a database of 267 start-up companies, the typical founder of a start-up company in Greece in 2020 is: a man, aged 25–34, with a master’s degree, 4–10 years of work experience, 1–5 years of work experience in a managerial position, and no experience in starting a company. The critical decisions he will need to make relate to adapting the business model, the type of financing (venture capital or equity), building the right team, and allocating human resources.

A Foundation study (2023) claims to have identified and analyzed the profiles of more than 3,000 Greek startups. “Some of our country’s strengths lie in the fact that both creators of innovative products and innovative small and medium-sized enterprises collaborate with other players in similar markets. There is also a trend toward employment in more innovative companies, alongside an increase in sales of new and innovative high-tech products. Finally, in the past year (2022), business process innovators have emerged, helping the country move toward larger-scale innovations (Foundation 2023, p. 13). The same report (p. 15) notes that “the Greek venture capital and startup ecosystem is growing and maturing” and that “in 2022, we also saw a record in exit activity (company sales) as 19 Greek startups were acquired by third-party companies either in Greece or abroad” (Foundation 2023, p. 16).

Some of the main findings of the study are as follows (Foundation 2023, p. 44):

- Very few young founders are emerging at present, and the number of entrepreneurs and first-time business founders needs to be increased and supported, as most view startups as a socially acceptable career path. This is because startup founders lack access to business consultants on entrepreneurship who combine affordable costs with sufficient experience.
- Many founders of new startups lack the ability or inspiration to tackle significant problems for global markets and focus their efforts exclusively on the local market.
- Training in innovation management is essential, as many startups fail very early on.
- Greater support is needed to promote women’s entrepreneurship and increase their representation among business founders. The lack of diversity in the Greek innovation and startup ecosystem has a significant negative impact on both the survival of startups and their long-term success.
- Entrepreneurial education is largely lacking for both startup founders and potential investors (high-net-worth individuals and investors). Founders who are skilled in technology lack the business knowledge and global network of contacts needed to scale the startups they have founded.
- There are many venture capital firms competing for the same funding deals for specific companies in both the initial investment stage and subsequent rounds (same deals, in Seed and Series A rounds), while -ups in the early stages of operation (early-stage companies) find it extremely difficult to secure funding. The creation of a strong angel investor syndicate and/or community could help improve the situation.

According to the same survey, in terms of age, 44% of participants are between the ages of 25 and 34, while 34% are between the ages of 35 and 44. The rest are over 45 years old, and only a small percentage (4%) are under 24. Regarding gender, 88% of founders are men, with just 12% being women. In terms of educational attainment, 64% hold a master’s degree, and just 18% have only a bachelor’s degree.

Regarding their involvement in the entrepreneurial process, 56% of founders are founding their first startup -up, meaning they have not previously founded other start-ups, while the remaining 44% are serial entrepreneurs who have founded other start-ups in the past before establishing their current company.

A large percentage (64%) of startup founders had previously worked as executives or employees at other companies before founding their startups, and only 18% of them founded companies without prior industry-related work experience. A significant 12% of founders had never worked before and founded their startups immediately after completing their studies.

Only 26% of survey respondents were sole founders of a startup. The rest had at least one co-founder, as having a strong team with diverse skills can prove to be a key prerequisite for a startup's success. On average, the start-up in question had two founders.

The majority (54%) of the founders in the study had founded their start-up in 2020 or later, a period that coincides with the duration of the COVID-19 crisis and the period immediately following it. The remaining 46% founded their startups between 2012 and 2019. Regarding startup revenue, 58% of founders stated that 80% of their income comes from Greece and 20% from abroad, while 20% of founders stated that 80% of their revenue comes from abroad.

Also the majority (56%) of the founders who responded to the study had secured funding of up to €250,000 for their current startup, and 12% had secured funding of up to €500,000. Additionally, 12% had secured funding in the range of €1 to €2 million. The relative majority (42%) of the founders who responded had total funding of up to €250,000 across all their businesses, while 38% had total funding of €2 million across all their businesses.

It is worth noting that the average age of companies in 2022 was 6.2 years, which is lower than the 7 years recorded in the previous survey. However, regarding the age of the company when it receives its first funding, this age is 1.7 years, compared to 2.1 years in 2021. The majority of startups (68%) have 1–10 employees.

Recent studies (Rios-Campos et al., 2024) also highlight the benefits of Business Angels working with Start-Up companies, offering capital and market expertise. Their conclusions are the same as previous studies (Van Osnabrugge et al., 2000), which also point out that Business Angels have helped many well-known companies to find and fund their way, including among others Apple, Amazon, Bell Telephone, Ford, Go2Net, etc. Researchers Mason and Harrison (2008) define business angels as an individual who either acts alone or in partnership with a formal or informal syndicate, who invests his own funds directly into a third party business where there is no family relationship and who, after making the investment, takes an active role in the business. Ramadavi (2009, p. 257) also concludes that "business angels are extremely important during the initial stages of financing (seed stage & start-up stage) and development of a business. As patient investors, they guide the founding entrepreneurs on the right path of business development while providing venture capital and expert knowledge about the business. Venture angels are playing an increasingly important role in financing many start-ups."

A new study (Griva et al., 2023, p. 9-10) which focused on Greek Start-Up using both qualitative and quantitative methods, by collecting 75 questionnaires from Greek Start-Up founders, and came to the following conclusions regarding the characteristics of Greek digital Start-Ups.

- Early-stage digital Start-Up businesses that experience growth adopt a mix of 'agile' culture (characterized as 'Clan' and 'Adhocracy').
- Growth-experienced early-stage digital Start-Up businesses embody high levels of innovation and commitment to learning and use their digital capabilities in a targeted way.
- Early-stage digital start-ups that are growth-aware build capabilities to adapt and integrate new information and knowledge.
- Early-stage digital start-ups that are growth-aware enhance their sales capabilities and demonstrate high empathy towards their customers.

When examining Greece's economic and business environment, it is evident that, according to the Index of Economic Freedom and based on 2022 data, Greece ranks last in the European Union and 70th globally, despite climbing two spots. (Gwartney et al., 2024). Greece holds the 70th place with Cambodia, Gambia, and Poland. Honduras, Kazakhstan, and Mongolia occupy 67th, 68th, and 69th place, respectively, followed by Kenya, Barbados, and Uganda in 74th, 75th, and 76th place, respectively.

As for the Global Innovation Index 2024, Greece ranks 45th among 133 countries. Just ahead of it are Bulgaria (38th), India (39th), Poland (40th), Thailand (41st), Latvia (42nd), Croatia (43rd), and Vietnam (44th), followed by Slovakia (46th), Saudi Arabia (47th), Romania (48th), Qatar (49th), Brazil (50th), Chile (51st), and Serbia (52nd) (WIPO 2024).

The changing point is the establishment of Elevate Greece (National Register of Start-Ups companies), within the context of the Greek legislation (Joint Ministerial Decision No.

134622 / Government Gazette B' /5587/December 18, 2020), which recognizes as start-ups companies the ones which meet the following criteria, mainly in terms of Potential Market Growth and Innovation

- There is technological innovation in the product/service and/or there is an innovative business model based on recent new technology

- At the same time there are few competitors (similar Start-Up companies or very few large ones). It should be clarified that the term 'competitors' refers to companies proposing solutions with similar advantages and not generally those targeting the same market.

- Innovative companies are also defined as those whose main activity is research-based with the aim of producing intellectual property with commercial exploitation potential ('knowledge-intensive firms').

- Further consider whether the business model and/or technology allows for rapid scaling of the size of sales to a global market. The company's main product/service must be standardized and not consulting/engineering services or bespoke manufacturing. (Elevate Greece, 2024).

Recent research (Foundation, 2025, p. 14-15) "Athens has re-entered the top 100 emerging startup ecosystems globally, according to the Global Startup Ecosystem Report (GSER) 2024⁶ by Startup Genome and the Global Entrepreneurship Network (GEN). Ranked in the 51-60 range, Athens saw its ecosystem value rise to \$4.2 billion, thanks in part to the \$1.7 billion valuation of the Greek "unicorn" Viva Wallet, marking a 40% increase from 2023... According to the Global Startup Ecosystem Index 2024 by StartupBlink⁷, Greece's startup ecosystem is ranked 49th globally, a drop of three spots from its previous position. Within Western Europe, Greece is placed 19th, with three cities making it into the top 1000, with Heraklion joining Athens and Thessaloniki."

The development of the ecosystem was marked with the establishment of new Venture Capital operating in Greece; Apeiron Ventures, Corallia Ventures, iGrow Venture Capital, Loggerhead Ventures (est. 2024), and new VC rounds for Metavallon VC, Big Pi, Sporos Platform and Uni.Fund (launched 2023). The new Venture Capitals were further supported by initiatives of the Greek Government, such as the Elkek (Greek Center for Defense Innovation), ESA-BIC Greece (Greek Space Entrepreneurship Hub), with specific focus on Defense and Space sectors.

The same research identifies 90 investments in Greek Start-Ups, with a total value of 555 million euros for 2024, with 15% of the Start-ups having received previous rounds of funding, while 45 investment are Seed rounds. Furthermore a number of initiatives derived from a combination of Universities and Private Sector (such as Venture Garder, StartSmart, EGG, Innovation for Society Awards (supported by the Region of Central Macedonia), Interamerican Challenges, Digital Gate Challenge, etc.) provided a set of opportunities for start-ups to respond directly to specific needs and challenges of established companies in Greece.

II. CONCLUSIONS AND FUTURE RESEARCH RECOMMENDATIONS

As a basic conclusion, the role of the central government has been critical but not a determinant one for the success and growth of the Greek Start-Up ecosystem; the Greek Start-up systems gains momentum with a mix of initiatives supported by both public and private sector; it seemed that at the last moment, the Greek governments realized the benefits of Start-Ups and Innovation and decided to support them, instead of just keeping up on their standard policies of increasing bureaucracy and taxation of the private business sector and aligned with efforts of the Greek diaspora to help Greek innovation efforts.

There are of course several considerations regarding the future evolution of the Greek Start-Up ecosystem; there are several concerns regarding the macroeconomic environment of the Greek economy, especially since the election for the central government is scheduled to take place in 2027, political tension and fear of political instability increases. At the same time, international events such as the crises in Middle East and Ukrainian may have cumulative impact in the Greek economy in general and in the development of the Start-Up ecosystem in the long term.

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