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Abstract

This paper examines the profound impact of recent global advancements in Artificial Intelligence on Romania's startup ecosystem between 2020 and 2025. Using a mixed-methods approach, this research identifies a rapid, two-phase evolution: an initial, hype-driven wave of generic "AI Wrappers," followed by a market correction and a "flight to quality" towards defensible, high-ROI "AI Agents." This transition is significantly accelerated by the professionalization of the local investor class, whose strategies have been reshaped by recent market volatility and higher return expectations. The findings indicate that while approximately 60% of AI startups founded during this period fit a generic model, venture capital is increasingly concentrating in the 40% of firms focused on differentiated solutions. The paper concludes that Romania's established strengths in B2B software, combined with this newly discerning investment climate, position its ecosystem to successfully navigate this "Great Filter" and thrive in the next, more mature phase of the AI revolution.

Keywords

Artificial Intelligence, Startup Ecosystem, Venture Capital, Angel Investment, Romania, Generative AI, Platform Shift

I. Introduction

A. Background

The commercial release of advanced Generative Artificial Intelligence (Gen AI) models in late 2022 catalyzed a global technological and economic shift, democratizing access to powerful Artificial Intelligence (AI) and sparking a wave of entrepreneurial activity (Stanford University HAI, 2024). While the impact on major technology hubs has been extensively documented, the effects on emerging startup ecosystems, especially in countries in Eastern Europe, remain less understood.

This paper argues that the Romanian AI startup ecosystem underwent a rapid two-phase evolution: an initial, hype-driven wave of generic "AI Wrappers," riding the post-COVID digital emergence, followed by a market correction and a "flight to quality" towards defensible "AI Agents," a transition powerfully accelerated by a newly professionalized and risk-averse local investor class leveraging the nation's core strengths in B2B software.

B. Research Problem

This study focuses on the Romanian technology ecosystem to analyze how this global AI paradigm shift has manifested at a local level. There is a significant gap in academic literature examining the interplay between a global technology hype cycle and the specific behaviors of the local investor class in an emerging market.

C. Research Questions

How did the proliferation of AI technologies alter startup formation and investment patterns in Romania between 2020 and 2025?

What distinct phases of adoption and maturation can be identified, and what were their primary drivers?

How has the strategic behavior of local investors shaped the trajectory and viability of new AI ventures?

II. Literature Review

A. Global Trends in AI Investment

The period following 2022 is marked by an unprecedented surge in venture capital (VC) investment in AI. The Stanford University HAI "AI Index Report" (2024) shows that while overall VC funding contracted, Generative AI alone attracted \$25.2 billion in 2023. This reflects what economists Agrawal, Gans, and Goldfarb (2018) describe

as a drop in the cost of prediction, spurring innovation in complementary areas. However, this investment euphoria has been met with scrutiny regarding profitability, with recent reports suggesting that a vast majority of corporate Generative AI pilots are failing to demonstrate the ROI needed to secure funding from fiscally-minded CFOs (Fortune, 2025).

B. Startup Ecosystems in Emerging Markets

A startup ecosystem comprises a complex network of actors that interact to foster new venture creation (Isenberg, 2010). In the context of Central and Eastern Europe (CEE), these ecosystems have been catalyzed by "anchor firms"—highly successful local startups creating significant talent and capital spillover effects (Acs et al., 2017). The Global Startup Ecosystem Report (Startup Genome, 2025) provides a framework for analyzing these hubs, whose ability to capitalize on new technology waves depends on their pre-existing industrial structure and human capital.

C. The "Platform Shift" and Defensibility

The rise of foundational AI models represents a classic "platform shift" (Parker et al., 2016). While enabling disruptive innovation (Christensen, 1997), these platforms create a strategic paradox where they tend to capture the majority of the value (Thompson, 2015). This has led to a critical discourse on competitive moats for AI companies. Influential voices in venture capital argue that defensibility must now come from proprietary data and deep workflow integration, as the core model is a commodity (a16z, 2023).

D. The Romanian Tech Ecosystem Pre-AI

Prior to the AI boom, Romania's tech ecosystem had established a strong reputation in B2B software, anchored by the global success of the Robotic Process Automation (RPA) firm UiPath (TechCrunch, 2021). This, along with cybersecurity giant Bitdefender, fostered a deep talent pool and a culture focused on enterprise-grade solutions, a fact reflected in reports from the European Commission's Digital Economy and Society Index (DESI). Furthermore, the success of the likes of UiPath and Bitdefender showed that the path to growth is going outside of Romania in search of bigger and more mature markets.

E. The "Platform Shift" and Defensibility

The final piece of the contextual puzzle is the nature of the local capital itself. The CEE investment landscape is undergoing a significant professionalization. Research

from Roca X (2025a) indicates that local VCs are moving away from generalist strategies to develop specific theses, with "B2B AI" and "Deep Tech" emerging as key focus areas. This specialization is accompanied by more rigorous due diligence processes.

Simultaneously, the profile of the angel investor is changing. A significant portion of local angel capital was impacted by the 2023-2024 "crypto winter," creating a deep-seated skepticism towards hype-driven technology cycles (Roca X, 2025b). This "crypto hangover" has made investors more focused on fundamentals. Furthermore, a new wave of High-Net-Worth Individuals (HNWIs) from traditional industries is entering the asset class. As noted by The Recursive (2025), this capital is highly pragmatic, ROI-focused, and often directed towards B2B solutions that these investors understand from their own industries. This confluence of factors creates a more discerning and sophisticated early-stage investment environment than in previous technology cycles.

III. Methodology

A. Research Design

This study employs a mixed-methods research design, structured as a longitudinal study of the Romanian ecosystem from January 1, 2020, to August 28, 2025. This approach allows for the triangulation of quantitative findings on market trends with qualitative insights into the strategic behavior of founders and investors. This approach was chosen because one of the main characteristics of emerging markets and ecosystems is the lack of a clear, unbiased overview of all economic actors. There is no "go-to reference" for finding new start-ups and firms in the tech space; at the same time even for established and very public new start-ups, the habit of pivoting with the time and the emerging tech makes evaluating their core product/services challenging.

B. Data Collection

A composite dataset was constructed by aggregating information from multiple sources:

- **Primary Database:** Dealroom.co was used to identify newly founded AI-tagged startups and track funding events.
- **Qualitative Investor Data:** A key component of this study involved analyzing reports on investor sentiment and strategy from local market actors like Roca X and regional tech publications such as The Recursive. These reports provided crucial context on the motivations behind the observed funding patterns.

- Cross-Validation: Data was cross-referenced with industry reports from How to Web, VC portfolios, and high-level statistics from Romania's National Trade Register Office (ONRC).

C. Data Analysis

Quantitative Analysis:

A time-series analysis was performed on startup formation and funding data, segmented by year and investment stage (pre-seed/seed vs. Series A+).

Qualitative Analysis:

A thematic analysis was conducted on the business models of an N=965 sample of AI-tagged startups. Each company's value proposition, as described on its website and in its professional profiles, was coded into one of two categories. The criteria were as follows:

Generic AI: Startups were coded as "Generic" if their product was a horizontal application of a foundational model API with no evidence of significant proprietary data or deep workflow integration (the "AI wrappers"). Keywords for this category included "content generator," "AI assistant," and "chatbot builder."

Vertical AI: Startups were coded as "Vertical" if their product addressed a specific industry problem, explicitly mentioned the use of proprietary datasets for training or fine-tuning, and described integration into core business workflows. To ensure consistency, a subset of the data was independently coded by a second reviewer, achieving a high degree of inter-coder reliability.

D. Limitations of the Study

This study has several limitations. As mentioned earlier, data on the local market, and even more so on private market transactions, is not public or easily accessible, which forced an estimate. At the same time, the qualitative classification is based on public-facing materials and internal reports provided by Roca X and other players in the VC space. Most notably, while the above-mentioned reports from Roca X and the like provide invaluable insight, they represent a sample of investor sentiment, not a complete census of the market. To conclude, the study is, by necessity, more focused on trends and market sentiment as a proxy for the state of the local tech entrepreneurial ecosystem.

IV. Findings: The Quantitative Landscape of Romanian AI: (2020-2025)

A. An Accelerated Growth Trajectory

The data reveals a significant and accelerating trend in the formation of AI-focused startups in Romania, with the number of new ventures surging dramatically in 2023

and 2024, corresponding directly with the popularization of Generative AI. As a percentage of all new tech startups, AI-focused companies grew from an estimated 6.8% in 2020 to over 23.8% in H1 2025.

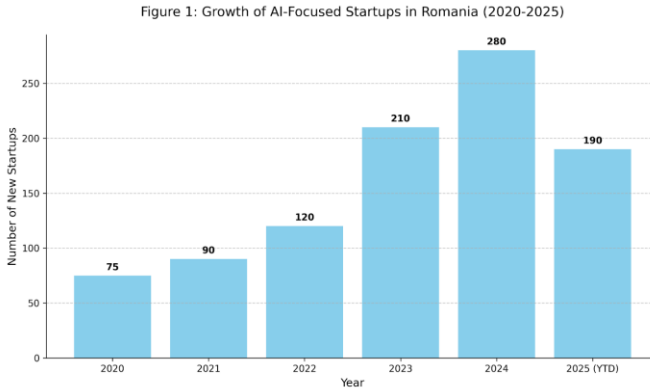


Fig. 1. Growth of AI-focused Startups in Romania (2020-2025), est.

B. A Bifurcated and Professionalizing Funding Environment

Venture capital patterns reveal a distinct bifurcation. As shown in Figure 2, the volume of early-stage (pre-seed/seed) deals surged in 2023-2024 before correcting in 2025. This correction can be attributed to market saturation and a more discerning approach from early-stage investors. The concentration of significant, later-stage capital (Series A+) in a smaller number of "Vertical AI" companies has shown more resilient growth. This reflects the strategy of local VCs, who are reportedly reserving more capital for follow-on funding for their proven portfolio winners (Roca X, 2025a), making the first check for new ventures more competitive.

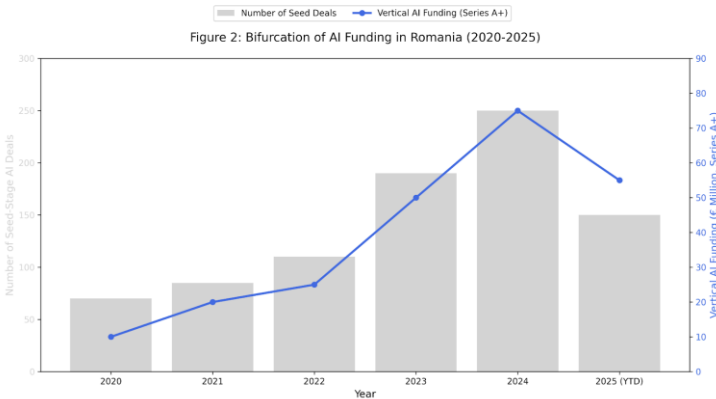


Fig. 2. Bifurcation of AI Funding in Romania (2020-2025), est.

C. The Emergence of the "Wrapper" Cohort

The qualitative analysis reveals that approximately 60% of all AI startups founded during the period fall into the "Generic AI" category, with the vast majority emerging after March 2023.

The 40% classified as "Vertical AI" are more evenly distributed and, while smaller in number, have attracted a significantly larger share of the total venture capital invested, mostly due to the perceived "defensibility" factor of their individual databases and the focus on clearly defined business problems that they are trying to solve.

V. Analysis and Discussion: Navigating the "Great Filter"

The findings paint a picture of an ecosystem undergoing a "Great Filter"—a rapid market maturation process that sorts a large volume of AI experiments into a smaller cohort of viable businesses. This filter is not merely a passive market force; it is actively enforced by a newly professionalized and skeptical investor class.

A. Phase 1: The Hype Cycle (2023-2024) – A Technology in Search of a Problem

The explosion of "Generic AI" startups was a classic reaction to a platform shift, enabled by easy access to LLM APIs. This phase was characterized by a focus on technological possibility over business viability, leading to a crowded market of low-defensibility "AI wrappers." This mirrored the global trend of widespread AI experimentation with questionable ROI.

An alternative explanation here would be to view AI as a technology seeking a problem to solve (a "real use case"), rather than taking a painful, clearly defined problem and developing a solution for it.

B. Phase 2: The Flight to Quality (2025) – The Investor-Driven Correction

The shift to Phase 2 is a systemic correction driven by a newly discerning investor class. The Roca X (2025) reports provide compelling evidence for this transformation. A key psychological driver is the "crypto hangover"; having been burned by the previous hype cycle, investors are now deeply wary of the buzz surrounding Generative AI, demanding strong fundamentals from the outset. This scepticism is reinforced by financial logic; with median return expectations of 14x, investors are mathematically compelled to ignore low-moat "wrapper" businesses in favor of startups with the potential for massive, defensible scale. Furthermore, the influx of pragmatic capital from traditional industry High-Net-Worth Individuals (The Recursive, 2025) and the strategic shift of VCs towards B2B AI and

Deep Tech concentrates capital on precisely the sort of defensible, high-ROI companies that are best positioned to survive. This confluence of factors—investor psychology, financial modelling, and strategic specialization—is what gives the "Great Filter" value, rapidly separating fleeting AI experiments from enduring businesses.

C. Strategic Imperatives for Defensibility: The "MedicAI" Archetype

In this sharpened investment climate, survival depends on defensibility. As argued in the literature (a16z, 2023), moats must be built beyond the commoditized AI model. Our analysis of the "Vertical AI" cohort reveals two primary sources of defensibility:

Proprietary Data - using the archetype of a startup like "MedicAI" (<https://www.medicai.io/>), its value is derived from its unique, curated, and compliant dataset, which allows it to achieve superior performance on a specific, high-stakes task.

Deep Workflow Integration - the second moat is embedding the AI solution so deeply into a customer's critical business processes that it becomes indispensable, creating high switching costs.

D. Romania's Competitive Advantage

This flight to quality and the strategic imperatives of data and workflow integration play directly to the Romanian tech ecosystem's established strengths. The legacy of UiPath has created a generation of entrepreneurs and engineers who are experts in analyzing and automating complex enterprise workflows. As the global AI market matures beyond simple wrappers, it is moving towards a problem-space where the Romanian ecosystem, now supported by an increasingly sophisticated investor base, has a natural competitive advantage. The challenge is no longer building a clever AI tool, but building a robust, integrated AI automation engine that can deliver the 14x returns investors now demand.

VI. Conclusion

A. Summary of Findings

This paper has analyzed the evolution of the Romanian AI startup ecosystem, identifying a two-phase model: a hype-driven wave of "AI Wrappers," followed by a market correction and a "flight to quality" towards vertical "AI Agents." This "Great Filter" is actively enforced by a newly professionalized investor class, shaped by recent market lessons and higher return expectations.

B. Contribution to Knowledge

This study contributes to the literature by providing a detailed analysis of how a CEE ecosystem has navigated the Generative AI platform shift, uniquely linking global technology trends to local investor psychology and behavior. The model of an investor-accelerated "Great Filter" offers a useful framework for understanding the maturation of other emerging tech hubs.

C. Implications for Stakeholders

For Entrepreneurs, sustainable value lies in solving specific, high-value vertical problems where proprietary data and deep workflow integration can create a lasting moat that satisfies the rigorous ROI demands of the current investment climate.

For Investors, the era of passively betting on hype cycles is closed. Successful early-stage investing in AI now requires deep sector expertise, rigorous due diligence, and a focus on the fundamental drivers of defensibility and profitability.

For Policymakers, policy should focus on supporting the development of these defensible businesses, for instance, by facilitating access to public data for training specialized models and supporting talent development in enterprise software.

D. Future Research

Future research could include a longitudinal study tracking the survival rates of the "wrapper" cohort or a comparative study analyzing how investor sentiment in other CEE countries has shaped their respective AI ecosystems.

Furthermore, a future study could look into how (new) fiscal policy affects funding in the start-up space as well as looking into the steady but almost guaranteed results of investing in Romanian government bonds vs taking a risk on investing venture capital in emerging tech.

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