Innovation Ecosystems and Startup Performance: Comparative Institutional Insights from Morocco and South Korea

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Abstract

This paper examines how the structural configuration of national innovation ecosystems shapes startup performance and what Morocco can learnthrough adaptive policy transferfrom South Korea's more mature system. Building on recent ecosystem diagnostics and measurement approaches [1, 2] and integrating the 4Ps innovation lens (product, process, position, paradigm), we develop a comparative analytical framework linking ecosystem components (institutions, finance, talent, knowledge infrastructure, networks, and market access) to observable startup outcomes (formation, funding depth, scaling capacity, and exit readiness). The study adopts a qualitative comparative case-study design based on secondary sources, triangulating international benchmarks and country diagnostics, including OECD's innovation policy evidence for Korea [3], ecosystem indicator frameworks [2], and global startup ecosystem benchmarking [4]. Findings indicate that South Korea's advantages are associated less with isolated instruments than with systemic coordination across R&D diffusion, digital infrastructure, demand creation pathways, and scale-up finance; Morocco shows accelerating early-stage dynamism but a thinner scale-up and exit pipeline, suggesting gaps in scale-up pathways and institutional alignment. The paper contributes an ecosystem-to-performance mechanism map for emerging economies and offers measurement-ready, non-prescriptive directions for Morocco centered on sequencing, coordination, and monitoring of ecosystem coherence.

Keywords: innovation ecosystem; startup performance; scale-up; policy coherence; adaptive policy transfer; Morocco; South Korea

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1. Introduction

1.1 Background and problem statement

Policies on innovation and entrepreneurship have grown less and less focused on individual tools, e.g. incubators, grants, and competitions, and more dependent on a systems approach, whereby the effect is dependent on how institutions, finance, talent, knowledge structures, and networks and market access interact. Recent done measurement stresses the fact that ecosystem performance should be regarded in terms of input output relations and close loops of relationships among the capabilities (e.g. skills, research, capital) and consequences (e.g. innovation, firm growth, exits).

In this context, the case of Morocco vs. South Korea can be meaningfully compared. South Korea is a developed, innovation-oriented economy, the ecosystem features of which, along with the complexity of the policy coordination issue, are recorded in recent OECD innovation-policy diagnostics [3]. Morocco, on the other hand, is an ecosystem that is in the transition phase: the activity of startups and initial support is becoming more robust, the main bottleneck is how to raise the step to scale-up, where to get advanced markets, scale-up finance, and institutional alignment to remain in high-growth paths [5, 1].

1.2 Study objective

The given study is intended to clarify the connection between the organisation of innovation ecosystems and their performance in startups (formation, funding progression, scale capacity and readiness to exit), and what it can offer lessons to Morocco through adaptive policy transfer that is to say the transfer of principles and mechanisms as opposed to the duplication of instruments [1].

1.3 Research question

What do the structural elements of innovation ecosystems mean to the performance of startups, and what can Morocco learn about South Korea about the systemic model by using adaptive policy transfer?

1.4 Research approach

Our design is a qualitative comparative case-study design which involves secondary resources and triangulation using (i) ecosystem diagnostic frameworks, (ii) literature on innovation-ecosystem indicators and (iii) startup ecosystem benchmarking reports. Triangulation is used to lend credibility to mechanism-based, as opposed to causal estimation using econometrics [2, 1, 4].

1.5 Contributions

There are three contributions made in this paper. First, it offers a map of ecosystem Components-to-performance stemming the components of the ecosystem against the outcomes of a startup through a logic that revolves around measurements (inputs -mechanisms-outputs) [2]. Second, it provides a comparative institutional by stating the coherence of the system coordination, continuity and R&D-to-market diffusion as opposed to singular programme [1]. Third, it has measurement-free non-prescriptive Moroccan-specific directions that target sequencing and governance alignment as part of current policy recommendations on startup and scale-up ecologies [5, 1].

2. Theoretical Foundations

The study employs three supplementary underlying views that are still core in the study of the ecosystem to fulfill the need by the reviewers to have a stronger theoretical anchoring. The understanding of an innovation ecosystem has observed that it is an interactive system between institutions, finance, human

capital, and entrepreneurial culture in its support of innovation and firm growth. According to the tradition of the National Innovation Systems, components of the innovation performance require institutional architecture and interactive learning processes that influence knowledge production and dissemination [6, 7]. The concept of Triple Helix model understands innovation through changing relations between universities, industry and government thus offering a prism through which governance, channels of diffusion and commercialization interfaces can be viewed [8]. Entrepreneurial ecosystem thinking emphasizes the systemic quality of enabling conditions; finance, institutions, talent and culture and promotes ecosystem design based on mechanisms as opposed to copying a single archetype [9]. Such reasons drive mechanism map: connecting ecosystem structure with outcomes of startup-performance and reason behind the logic of policy transfer being adopted in the comparative analysis.

3. Literature Review (2023–2026)

3.1 Systems performance: the move in ecosystem metaphor to system practice.

Recent research highlights how innovation eco systems are to be studied based on organised performance measures but not descriptions. A new survey of ecosystem indicators of the performance suggests a combined framework that is developed following the inputs and outputs of the ecosystem in favor of comparability and evaluation-based assessment [2]. Complementary measurement contributions suggest the tools that can be used to track the competitiveness and maturity of startup innovation ecosystems, which strengthens the move to operational-level diagnostics instead of a debate over concepts only [10].

3.2 The transition of startups to scale ups as a bottleneck.

The similarity in the 20242025 scholarship is that the mixture of ecosystem success does not rely on the creation of startups, but on the ability to facilitate the shift into scale-ups by providing access to markets, managerial capacity, networks, and growth-stage finance. The latest paper on the policies of emerging entrepreneurial ecosystems in the public gives scale-up limitations, and they suggest specific interventions above initial support [11]. The review built by the European Commission is a synthesis of evidence of policy-design issues and supports fresh consideration of startups and scale-ups as competitiveness drivers [5].

3.3 At this stage, a healthier environment and policy coherence are achieved through ecosystem diagnostics

In the recent policy literature, the focus of the policies is towards multi-dimensional diagnostics instead of the single-index rankings. OECD presents an Entrepreneurial Ecosystem Diagnostics framework that presents a model to evaluate the ecosystems in terms of inputs, outputs, and variation with emphasis on the definition of coherence in the institutions, finance, and capabilities in entrepreneurial performance [1]. Such a view supports the point of view that performance in an ecosystem is the resultant ability through coordination mechanisms, namely as governance, the capacity of implementation, and alignment and not the outcomes of isolated programmes.

3.4 Principles of design: Placemaking, governance and digital infrastructure

Recent synthesis activity emphasizes that conditions of design and orchestration which are frequently underestimated in support of ecosystem performance include collaborative governance, human-centric ecosystem design as well as efficient digital infrastructure. These pillars are introduced as rational concepts on how to establish inclusive and high-performing ecosystems and at the same time honor local variability-congruent with adaptive transfer logic [12].

4. Operationalisation and Conceptual Framework

4.1 Conceptual model: Ecosystem to Mechanisms to Startup Performance

We define national innovation ecosystem as a complex of complementary capabilities that do not just perform well based on the existence of elements (i.e. universities, funds, incubators) but rather on how these are coordinated and connected [1]. The mechanisms formed by ecosystem inputs (institutions, finance, skills, infrastructure, networks) can be facilitated or limited by the inputs themselves to produce the output of creating a startup (formation), the progression of funding (progression), scaling capacity (capacity), and exits (exits). This inputs-mechanisms-to-outputs logic is in line with measurement-based frameworks of innovation ecosystem performance indicators [2].

This number represents a causal model (see fig. 1) of three layers whereby ecosystem structure (Layer 1) is connected with an intermediate mechanism (Layer 2), and at the end of it all, the tangible startup results (Layer 3). The right-to-left movement puts emphasis on the systemic innovations dynamics outlined in the current entrepreneurial ecosystem reports.

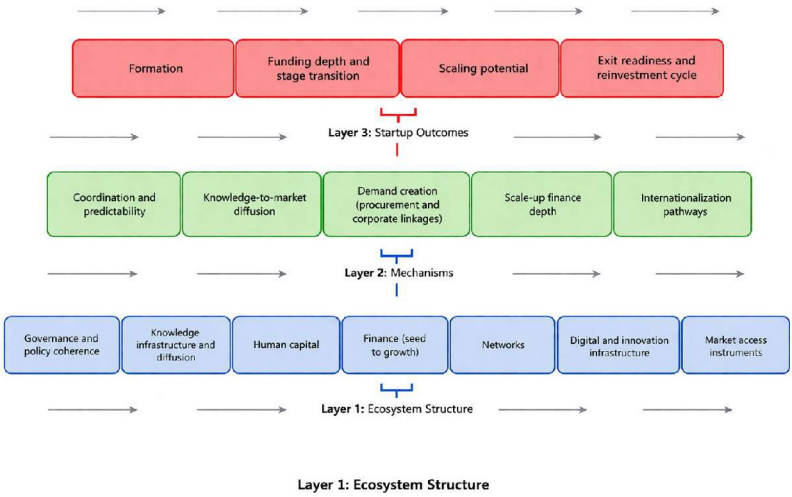

Figure 1: Mechanism Map of Startup Ecosystems

4.2 Why the 4Ps lens is used

The 4Ps innovation lens (product, process, position, paradigm) is used as a classification device to identify where ecosystem constraints bind most strongly. The 4Ps framework allows analysis beyond technological innovation by capturing strategic, organizational, and market positioning dimensions. Process bottlenecks often reflect weak diffusion channels and capability-building; position bottlenecks reflect limited market access and weak demand linkages; paradigm bottlenecks reflect institutional fragmentation or cultural risk aversion embedded in governance and norms. This improves analytical precision without claiming econometric causality [1].

4.3 Operationalization (measurement-ready indicators)

Below in table 1, is a measurement-ready operationalization aligned with recent ecosystem indicator work and OECD diagnostics

Table 1: Ecosystem Dimensions for Startup Scale-Up: Mechanisms and Indicators

Ecosystem dimension	What it captures	Key mechanism	Observable indicators (examples)
Governance and coordination	Coherence, execution capacity, policy continuity	Predictability → investor confidence → deeper pipelines	Strategy continuity signals; coordination bodies; regulatory consistency proxies
Knowledge infrastructure and diffusion	R&D-to-market translation capacity	Diffusion → commercialization → scale-up traction	Applied research programs; industry–university collaboration signals; testbeds and TTO proxies
Human capital and skills	STEM + entrepreneurial/managerial capability	Capability-building → survival + scaling resilience	STEM pipeline proxies; scaling/management programs; talent retention signals
Finance (seed to growth)	Depth across funding stages	Stage transition → scale-up capacity → exits	Deal-stage distribution; availability of growth capital; co-investment mechanisms
Networks and orchestration	Density of connections across actors	Network effects → faster access to resources/customers	Accelerator–corporate partnership activity; cluster linkages; mentoring density proxies
Market access and demand	Ability to generate early demand and large customers	Procurement/corporate linkages → revenue scaling	Procurement for innovation pilots; large-firm startup programs; export support pathways
Digital and innovation infrastructure	Connectivity + enabling platforms	Lower transaction costs → faster experimentation	Digital infrastructure quality proxies; innovation districts; shared labs/testbeds

5. Methodology

5.1 Research design

This paper will be a qualitative comparative case-study study to clarify how the national innovation ecosystem structures determine the performance of startups in South Korea and Morocco. It is focused on the mechanism-based explanation, or how elements of the ecosystem engage each other to produce certain observable patterns instead of the econometric causal estimation [1].

5.2 Case selection logic

The selected cases examples were that of a most-different systems design, South Korea is a mature economy based on innovation, well-documented in the recent diagnostics in terms of governance, R&D and infrastructure strengths, whereas Morocco is an example of an emerging ecosystem with recent reports suggesting a greater dynamism in the early stages, however, with scale-up pipeline and exit barriers [13].

5.3 Triangulation and sources of data

The analysis is based on secondary sources and the triangulation is based on three materials, including (i) ecosystem diagnostic frameworks [1], (ii) innovation system benchmarking studies [14], and (iii) startup ecosystem benchmarking and country ecosystem reports [4, 13]. Only Claims that are supported by at least 2 external sources remain, or when they are made to be interpretative.

5.4 Analytical procedure

The coded evidence is organized within the dimensions of ecosystem and the mechanism chain tracked within the order: condition - mechanism - outcome. Another technique is the cross-case synthesis to determine the common and unique bottlenecks. A translation of Mechanisms into context- sensitive policy options is then made without the use of prescriptive language and replication of instruments, which is consistent with the principles of adaptive policy transfer [1].

5.5 Limitations

Econometric causal effects are not pegged in this research; secondary sources are characterized in diverse ways in which the findings are reported as directional, mechanism-based understanding but not as the definite ranking [2, 14]. The heterogeneous national ecosystems themselves are not completely exploited at the hubs of intra-country differences, and the paper does not exhaust such differences.

6. Findings (Comparative Analysis)

6.1 South Korea: Pathways to systems coherence and scale-up

OECD diagnostics of the recent years paint the picture of a mature, innovation-led economy with the high level of science and technology and well-structured infrastructure but, most importantly, with the system-level governance and coordination as the keys to maintaining the performance [3]. In the mechanism map, institutional strength supports the predictability of policy that consequently increases investor confidence as well as the sustainability in the translation between research and commercialization.

The strongest ecosystem characteristics of South Korea are more associated with the transformation of the intensity of R&D into innovation opportunities and penetration into technology, especially in the highly developed ICT-related sectors [3]. This mechanism is essentially based on the diffusion and absorption of knowledge outputs into scalable ventures that are aided through applied programmes, industry linkages, and also infrastructural encouragement and not necessarily through R&D expenditure.

Throughout the ecosystem design literature, demand side channels (in particular, the formation of markets via procurement based channels), corporate linkages are cited again and again as being essential to scale [12]. Even though this case is not a quantitative measure of procurement impacts, a system that is featured in the Korean case augurs well with a situation where innovative markets and institutional capacity enhance the risk of early leverage and a subsequent transition to scale-ups.

Global benchmarking asserts that the characteristics of the high-performing ecosystems are in the form of deeper pipelines, and better stages progression [4]. South Korea, when looked at in terms of our conceptualism, should be viewed as being mature with greater potential of going beyond a seed to growth stage which has been buttressed by institutional predictability and market-scale opportunities.

6.2 Morocco: Low level dynamism and scale-up and exit limitations

The most recent reports on the ecosystem offer the increased visibility of the ecosystem and early dynamism in Morocco, yet also highlight the late dynamism and exits as the key challenges at the same time [13]. This is in line with an ecosystem maturation trajectory in which formation and early-support activities have a faster rate than the scale-up trails with cultural risk aversion being a significant limitation.

OECD diagnosis In an OECD diagnostics approach, ecosystem failures are often created by mismatch between institutions, finance and capabilities, and not by the lack of particular programmes [1]. In the mechanism interpretation of case Morocco, fragmentation and lack of orchestration down plays the transformation of early activity stage to end product scaling.

According to recent reviews of policy, it is clear that the effective policy should include finance, skills, location, and demand-side channels, which supports the idea that scale-up would need the support of not only the supply-side policies [5]. In Morocco, it might be effective to reinforce channels to market access, namely, corporate linkages, pilot projects on procurement of innovation, and export preparation, which would be crucial in positioning innovation (the 4Ps) without necessarily meaning a general tool.

6.3 Cross point synthesis: seeming to be most important mechanisms

To begin with, it becomes clear that the concept of ecosystem coherence turns out to have a stronger impact than independent instruments: performance is determined by the way in which inputs can be converted into outputs by interconnected processes [2]. Second, the startup-scale-up process is a case of bottleneck in the competitiveness of the ecosystems [5]. Third, demand side channels setting up early markets and linking startups with large customers supplement finance and incubation in supporting scaling [12].

7. Conversation and Conclusions

Using the principles of adaptive policy transfer, lessons are framed in terms of the mechanisms that may be intensified by Morocco instead of following in the footsteps of South Korea in terms of the institutional architecture. Predictability and pipeline continuity can be increased by improving coordination and routines of execution [1]. The enhancement of R&D-to-market diffusion can be done through translational platform and commercialization interface [3]. Market formation of scale-ups can be facilitated through demand end-fold avenues such as procurement pilots, corporate- start up partnerships, export preparedness avenues [12, 5].

Other than the initial capital source, the ability to access follow-on and growth capital is critical in helping promising businesses to become a scale-up; the accessibility is also the main scarcity point in the maturation of the ecosystem. The bottleneck is heightened when the market structures of risk capital are shallow as well as in cases where the institutional investors and corporate capital are having poor links with the entrepreneurial pipelines.

The effectiveness of ecosystems in turning the knowledge resources into scalable enterprises is determined by the presence or absence of talent pipelines and absorptive capacity. Human-capital quality becomes a relevant factor of ecosystem functionality, which can incorporate, not just supply of STEM, but managerial abilities of scaling, developed entrepreneurial skills, and boundary-spanning profiles linking research, industrial demands and international markets.

The results highlight that ecosystem integrity is more significant than intervention policy motives. The difference in performance can be explained by the alignment in the areas of governance, diffusion channels, market formation, and stage finance instead of existing programmes.

7.1 Measurement-ready monitoring indicators

Table 2 describes a small indicator set designed for monitoring ecosystem coherence and scale-up capacity

Mechanism to monitor	Indicator (examples)	Why it matters
Stage progression	Share of deals/financing by stage; follow-on rate	Captures pipeline depth and scaling transition
Demand creation	Number/value of procurement pilots; corporate partnership counts	Tracks market formation pathways
Diffusion/commercialization	Applied research partnerships; tech transfer outputs; testbed usage	Tracks R&D-to-market conversion capacity
Talent for scaling	Scale-up programs; experienced founder density proxies	Captures managerial capability for growth
Ecosystem connectivity	Co-investment networks; accelerator–corporate linkages	Approximates orchestration and network effects
Exit readiness	M&A events; late-stage rounds; reinvestment signals	Indicates value capture and ecosystem recycling

Table 2: Mechanisms to Monitor Startup Ecosystem Maturity: Indicators and Impact

(Framework logic grounded in measurement-oriented ecosystem approaches: Statistics Canada, 2024; OECD, 2025).

8. Conclusion

This paper has analyzed how the structural arrangement of national innovation ecosystem fits the performance of start ups and what lessons could be learnt by Morocco by transferring adaptive policies through the more established South Korean ecosystem. Based on a qualitative comparative case-study approach to the research, using triangulated secondary sources, the research built an ecosystem to mechanisms to performance framework connecting ecosystem elements to the visible start-up performance. As indicated by the comparative analysis, the South Korean benefits should be seen in terms of the systemic coherence in terms of governance, diffusion, infrastructure, demand formation and staged financing whereas Morocco displays faster early pace momentum but thinner scale-up and exit pipeline.

The paper avoids the prescriptive replication of tools by putting comparative evidence into policy context rather than accentuating sequencing, coordinated practice, as well as measurement-specific monitoring as viable guidelines. The operating state of the start-up ecosystem relies on the systemic coordination as opposed to individual measures.

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