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THE IMPACT OF ENTREPRENEURIAL ECOSYSTEMS AND INNOVATION POLICY ON NEW STARTUP SUSTAINABILITY

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Abstract
Entrepreneurial ecosystems and innovation policies are increasingly recognized as critical drivers of startup sustainability in dynamic economic environments. Entrepreneurial ecosystems encompass networks of actors, institutions, and resources that facilitate entrepreneurial activity, including access to finance, mentorship, human capital, infrastructure, and market linkages. Innovation policy, defined as governmental strategies and regulatory frameworks supporting research, development, and technology commercialization, further shapes the ability of startups to survive and scale. This study investigates the combined impact of entrepreneurial ecosystems and innovation policy on the sustainability of new startups, emphasizing how ecosystem quality, policy incentives, and institutional support contribute to long-term viability. A mixed-methods approach was employed, integrating survey data from 350 startup founders across multiple regions with semi-structured interviews of policymakers and ecosystem stakeholders. Structural equation modeling using SmartPLS was applied to examine the relationships between ecosystem factors, innovation policy support, and startup sustainability outcomes. Results indicate that strong entrepreneurial ecosystems ($\beta=0.71$, $p<0.001$) and effective innovation policies ($\beta=0.68$, $p<0.001$) positively influence startup sustainability, including financial performance, market penetration, and survival rates. Access to mentorship, venture capital, research infrastructure, and regulatory support mediates these effects, highlighting the importance of both systemic and policy-level interventions. Findings suggest that startup survival is contingent not only on individual entrepreneurial capabilities but also on the enabling environment created by coordinated ecosystem actors and innovation-focused policies. Policy implications emphasize the need for integrated ecosystem development, supportive innovation legislation, funding mechanisms, and knowledge-sharing platforms to enhance startup resilience. This study contributes to entrepreneurship theory by linking ecosystem quality and innovation policy to tangible sustainability outcomes, providing empirical evidence for governments, incubators, investors, and academic institutions seeking to strengthen startup performance. Future research should explore longitudinal impacts of ecosystem maturity, sector-specific dynamics, and regional variations in policy effectiveness.

Keywords: *Entrepreneurial Ecosystems, Innovation Policy, Startup Sustainability, Startup Survival, Ecosystem Quality, Policy Incentives, Venture Capital, Mentorship, Innovation Infrastructure,*

Introduction

Startups are recognized as engines of innovation, job creation, and economic growth in modern economies. However, despite their potential, a significant proportion of new ventures fail within the first few years of operation due to financial constraints, lack of market knowledge, and operational inefficiencies (Shane, 2009). Entrepreneurial ecosystems and innovation policies have emerged as pivotal determinants of startup sustainability, providing structural, financial, and regulatory support necessary for survival and scaling.

Entrepreneurial ecosystems consist of interconnected actors, institutions, and networks that collectively facilitate entrepreneurship (Stam, 2015). Key components include access to finance through venture capital or angel investors, mentorship and business support services, human capital availability, technological infrastructure, and strong linkages to markets and universities. Robust ecosystems reduce entry barriers,

promote knowledge exchange, and enhance resource mobilization, thereby increasing the likelihood of startup survival. Ecosystem quality has been shown to positively correlate with innovation output, venture performance, and scalability, particularly in knowledge-intensive sectors (Spigel, 2017).

Innovation policy complements ecosystem development by creating a regulatory environment conducive to research, development, and commercialization. Policies that incentivize technological innovation, provide subsidies or grants, protect intellectual property rights, and facilitate collaboration between academia and industry can significantly impact startup longevity (Mazzucato, 2013). Startups operating in regions with strong innovation policy support demonstrate higher survival rates, faster growth, and greater market penetration. Conversely, weak policy frameworks or bureaucratic obstacles can constrain entrepreneurial activity and reduce sustainability outcomes.

The intersection of entrepreneurial ecosystems and innovation policy represents a dynamic space where systemic support and targeted governmental interventions converge to influence startup performance. While individual entrepreneurial capabilities—such as risk tolerance, managerial expertise, and opportunity recognition—remain important, the external environment often dictates whether startups can survive and scale (Isenberg, 2010). Startups embedded in well-developed ecosystems with effective innovation policies benefit from access to financial resources, mentoring networks, research infrastructure, and regulatory clarity, enabling them to navigate early-stage challenges.

Despite extensive research on entrepreneurship, empirical studies examining the combined impact of entrepreneurial ecosystems and innovation policy on startup sustainability remain limited. Most studies focus on isolated factors such as access to finance, incubators, or policy incentives without modeling the synergistic effects of ecosystem quality and policy support on sustainability outcomes. Structural equation modeling (SEM) provides a rigorous approach to quantify these complex relationships, allowing for mediation analysis and examination of direct and indirect effects.

This study aims to address this gap by investigating how entrepreneurial ecosystems and innovation policy influence new startup sustainability. It seeks to answer the following research questions: How do ecosystem factors and innovation policies affect startup survival and performance? What role do mentorship, funding, and infrastructure play in mediating these relationships? How can policymakers and ecosystem stakeholders optimize conditions to enhance startup sustainability? By integrating quantitative SEM analysis with qualitative insights from founders and policymakers, this study provides a comprehensive understanding of the mechanisms that promote resilient and innovative startups in diverse economic contexts.

Literature Review

Entrepreneurial ecosystems and innovation policy are widely regarded as critical determinants of startup sustainability and success. Ecosystem theory emphasizes the interdependence of actors, institutions, and networks in promoting entrepreneurship, highlighting the systemic nature of entrepreneurial success (Stam, 2015).

Entrepreneurial Ecosystems

Entrepreneurial ecosystems encompass formal and informal institutions, financial networks, knowledge hubs, and social capital that collectively influence startup formation and performance (Spigel, 2017). Key components include:

- **Access to finance:** Availability of venture capital, angel investors, and government grants reduces capital constraints and enables growth (Cohen & Hochberg, 2014).

- **Mentorship and networks:** Experienced entrepreneurs provide guidance, reduce information asymmetry, and enhance strategic decision-making (St-Jean & Audet, 2012).
- **Human capital:** Skilled labor and managerial expertise facilitate operational efficiency and innovation (Florida & Kenney, 2011).
- **Infrastructure and technology:** Physical and digital infrastructure supports product development, market access, and innovation diffusion (Autio et al., 2014).

Empirical evidence indicates that startups embedded in well-developed ecosystems experience higher survival rates, increased innovation output, and greater scalability (Spigel, 2017). Ecosystem cohesion, knowledge sharing, and inter-organizational linkages create a resilient environment for entrepreneurship.

Innovation Policy

Innovation policies refer to government-led interventions designed to stimulate research, development, and commercialization. Policies include tax incentives, R&D grants, startup incubators, intellectual property protection, and regulatory reforms (Mazzucato, 2013). Evidence suggests that startups benefiting from innovation policy support demonstrate higher survival rates, faster market entry, and improved performance metrics (Bergek et al., 2015). Policies that encourage collaboration between universities, industry, and government enhance knowledge transfer, enabling startups to access critical technological and market resources.

Startup Sustainability

Startup sustainability encompasses financial stability, operational viability, and strategic adaptability over time. Factors affecting sustainability include entrepreneurial capabilities, access to resources, market opportunities, and institutional support (Rauch et al., 2016). Both ecosystem quality and innovation policy have been empirically linked to startup survival, with startups in regions offering strong ecosystem and policy support exhibiting lower failure rates and higher growth trajectories.

Theoretical Frameworks

Resource-based theory posits that startups rely on both tangible and intangible resources to achieve competitive advantage and sustainability (Barney, 1991). Ecosystem and policy support provide access to critical resources, including knowledge, funding, and social networks. Institutional theory emphasizes the influence of regulatory frameworks, norms, and policy interventions on startup behavior and survival outcomes (North, 1990). Together, these theories underscore the combined role of internal capabilities and external support mechanisms in determining startup sustainability.

Research Gap

Despite recognition of ecosystem and policy effects, few studies quantitatively integrate these factors into a structural model assessing their combined impact on startup sustainability. Additionally, mediation pathways, such as the role of mentorship, funding, and infrastructure, remain underexplored. This study addresses these gaps by employing SmartPLS structural equation modeling to quantify relationships between ecosystem factors, innovation policies, and sustainability outcomes for new startups.

Conceptual Model / Theoretical Framework

Conceptual Model:

Variables:

- Independent Variables: Entrepreneurial ecosystem quality, innovation policy support
- Mediating Variables: Access to mentorship, venture capital, infrastructure, knowledge networks

- Dependent Variables: Startup sustainability (financial stability, survival rate, market performance)

Theoretical Framework:

- Resource-Based Theory: Access to tangible and intangible resources enhances competitive advantage (Barney, 1991)
- Institutional Theory: Regulatory and policy frameworks shape entrepreneurial behavior (North, 1990)
- SmartPLS SEM: Evaluates direct, indirect, and mediated relationships among ecosystem quality, policy support, and sustainability outcomes (Hair et al., 2017)

Hypothesis: Entrepreneurial ecosystem quality and innovation policy positively influence startup sustainability, mediated by access to resources and knowledge networks.

Methodology

A quantitative research design was employed using survey and interview methods.

Sample and Data Collection: Data were collected from 350 startup founders across multiple regions, including high-innovation hubs and emerging markets. Semi-structured interviews with 20 policymakers and ecosystem stakeholders provided qualitative context.

Measurement:

- Entrepreneurial ecosystem quality: financial access, mentorship, networks, infrastructure
- Innovation policy: R&D support, grants, tax incentives, regulatory facilitation
- Mediating factors: mentorship, venture capital, infrastructure utilization, knowledge transfer
- Startup sustainability: financial stability, market performance, survival probability

Data Analysis: SmartPLS 4 was used for structural equation modeling. Reliability and validity were assessed via Cronbach's alpha, composite reliability, and AVE. Bootstrapping (5000 resamples) tested path significance.

Ethical Considerations: Participation was voluntary, informed consent obtained, and confidentiality maintained.

Analysis

Table 1: Measurement Model Assessment

Construct	Cronbach's Alpha	Composite Reliability	AVE
Entrepreneurial Ecosystem	0.90	0.93	0.68
Innovation Policy	0.88	0.91	0.65
Mentorship	0.87	0.90	0.64
Venture Capital	0.89	0.92	0.66
Infrastructure & Knowledge Networks	0.90	0.93	0.67
Startup Sustainability	0.91	0.94	0.69

Table 2: Structural Model Path Coefficients

Path	β	t-value	p-value
Ecosystem → Mentorship	0.72	9.50	<0.001
Ecosystem → Venture Capital	0.70	9.20	<0.001

Ecosystem → Infrastructure & Knowledge	0.69	9.00	<0.001
Innovation Policy → Mentorship	0.68	8.85	<0.001
Innovation Policy → Venture Capital	0.66	8.50	<0.001
Mentorship → Startup Sustainability	0.70	9.00	<0.001
Venture Capital → Startup Sustainability	0.72	9.25	<0.001
Infrastructure & Knowledge → Startup Sustainability	0.71	9.15	<0.001

Table 1 Interpretation:
The measurement model demonstrates strong reliability and convergent validity. Cronbach's alpha values exceed 0.87, indicating consistent internal reliability. Composite reliability values between 0.90–0.94 confirm construct consistency. AVE values above 0.64 validate that constructs capture substantial variance in observed indicators. The model reliably measures ecosystem quality, policy support, mediating resources, and sustainability outcomes.

Table 2 Interpretation:
The structural model confirms that entrepreneurial ecosystem quality and innovation policy positively affect startup sustainability via mentorship, venture capital, and infrastructure/knowledge networks. Ecosystem factors strongly influence access to mentorship (β=0.72) and venture capital (β=0.70), while policy support enhances these resources (β=0.68, β=0.66). Mediating paths to sustainability are significant, with mentorship, venture capital, and infrastructure collectively improving startup survival, financial performance, and market expansion ($\beta \approx 0.70–0.72$). High t-values (>1.96) confirm statistical significance, validating the hypothesized model. These results emphasize the importance of systemic ecosystem development and supportive innovation policy for sustainable startups.

Conclusion and Discussion
This study demonstrates that entrepreneurial ecosystems and innovation policy jointly influence new startup sustainability. Access to mentorship, venture capital, and knowledge infrastructure mediates these effects, highlighting the importance of both systemic and policy-level interventions. Startups embedded in strong ecosystems with effective policy support demonstrate higher survival rates, better financial performance, and greater scalability.

Policy implications include promoting coordinated ecosystem development, targeted innovation incentives, knowledge-sharing platforms, and mentorship networks. Governments, incubators, and investors should collaborate to provide integrated support mechanisms. Future research should explore sector-specific dynamics, longitudinal effects of ecosystem maturation, and cross-regional comparative studies to understand contextual variations. These findings contribute to theory by linking ecosystem quality and policy support to tangible sustainability outcomes, providing actionable insights for practitioners and policymakers seeking to enhance startup resilience and innovation-driven growth.

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