

The Support Mechanisms of Logistics Entrepreneurship from the Perspective of Innovation Ecosystems

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Abstract. The logistics industry provides essential transportation and distribution support for the operation of the global economy and international trade. However, logistics startups face serious difficulties due to high capital needs, infrastructure dependence, and complex multi-actor coordination. Consequently, the concept of the innovation ecosystem has gained growing attention as an important factor in supporting entrepreneurship in logistics and related sectors. More precisely, an innovation ecosystem is a network of interconnected organizations and institutions that collectively offer resources, knowledge, and support for innovation and new business development. This paper examines how innovative ecosystems help logistics startups establish and develop new businesses. Through the use of a literature review, this study analyzes existing academic research on logistics clusters, entrepreneurial ecosystems, and logistics-related innovation systems. In particular, it investigates the ways in which innovative ecosystems support logistics startups and reduce entry barriers for new logistics firms. The results indicate that innovative ecosystems primarily support logistics entrepreneurship by providing shared infrastructure, financial resources, policy assistance, and enhanced institutional environments. Notably, logistics clusters and national logistics systems are identified as important components of innovative ecosystems. Thus, this paper contributes to a clearer understanding of logistics entrepreneurship and provides insights for entrepreneurs, policymakers, and future studies.

Keywords: Innovative ecosystem, Logistics entrepreneurship, Logistics clusters, Startup support, Entrepreneurial environment

1. Introduction

The logistics industry serves as an essential driver of modern economic activity. In particular, it supports global trade, manufacturing, and e-commerce by enabling the efficient movement of goods across regions and countries. With the rapid development of digital technologies and online retail platforms, the demand for logistics services has grown significantly in recent years. As a result, logistics entrepreneurship is a key issue for researchers and policymakers. Despite its importance, logistics entrepreneurship faces greater challenges than entrepreneurship in most other industries. For example, logistics startups generally face high capital requirements for warehouses, vehicles, and information systems. Besides, logistics operations require coordination among multiple actors, including suppliers, customers, customs authorities, and service providers. These challenges make it

difficult for individual entrepreneurs to enter the logistics market without external support. In this context, innovative ecosystems have surfaced as a key enabler of logistics entrepreneurship. An innovative ecosystem refers to a system of interconnected actors, such as governments, large firms, financial institutions, research organizations, and startups, that interact to support innovation and new business formation [1]. In these ecosystems, resources and knowledge flow freely, and risks are distributed across various stakeholders. Studies have explored logistics clusters, entrepreneurial ecosystems, and innovation-driven regional growth [2,3]. However, research specifically focusing on how innovative ecosystems support logistics startups remains limited and fragmented. This paper bridges this gap through a review of existing literature on innovative ecosystems and logistics entrepreneurship, further logistics clusters, policy-driven innovation systems, and national logistics performance. Through this approach, it investigates how innovative ecosystems support logistics startups in establishing businesses and identifies the key mechanisms that enable these ecosystems to foster logistics entrepreneurship. By answering these questions, this paper aims to contribute to a better understanding of logistics entrepreneurship and provide useful insights for future research and policy design.

2. Overview of innovative ecosystems in logistics

2.1. Definition of innovative ecosystems

The concept of an innovative ecosystem originates from innovation studies and entrepreneurship research. Specifically, an innovative ecosystem is generally defined as a network of interdependent actors and institutions that collectively support innovation, knowledge creation, and new business development. These actors may include firms, governments, universities, financial institutions, and support organizations [4].

Unlike traditional linear models of innovation, innovative ecosystems emphasize interaction, collaboration, and co-evolution among participants. In this context, resources such as capital, knowledge, infrastructure, and human talent flow within the ecosystem, allowing firms to access external support that would be difficult to obtain independently. As a result, innovative ecosystems are often associated with higher levels of entrepreneurship and economic growth. In the logistics sector, innovative ecosystems take various forms, including logistics clusters, innovation parks, digital logistics platforms, and national logistics systems [5,6]. These ecosystems help logistics startups operate, test, and grow.

2.2. Features of logistics entrepreneurship

Logistics entrepreneurship differs from entrepreneurship in many other industries. In particular, one of the most prominent features is its capital intensity, where new logistics firms must invest heavily in assets such as warehouses, transportation vehicles, IT systems, and safety equipment before they can begin to generate revenue. Besides, logistics operations are highly dependent on infrastructure, including critical assets like ports, roads, railways, and customs facilities, all of which necessitate considerable outside assistance and coordination [7]. Moreover, logistics services demand complex coordination among multiple stakeholders, such as suppliers, customers, customs authorities, and service providers, which makes managing operations particularly challenging.

These inherent characteristics contribute to the high entry barriers that logistics startups face. Often, entrepreneurs in this field lack the financial resources and bargaining power needed to overcome such challenges alone. Thus, logistics entrepreneurship relies extensively on external

resources from innovative ecosystems, offering shared infrastructure, financial aid, and institutional assistance [8]. By providing these essential services, innovative ecosystems help mitigate risks and improve the chances of survival and growth for logistics startups.

3. Enabling mechanisms of the innovation ecosystem for logistics entrepreneurship

3.1. Resource sharing and cost reduction

Through resource sharing and cost reduction, innovative ecosystems significantly contribute to the success of logistics entrepreneurship. In logistics clusters and innovation parks, multiple businesses operate in close proximity and share access to key infrastructure such as warehouses, transportation hubs, information systems, and even software platforms for logistics management [2]. The shared use of resources lowers entry barriers for new businesses and promotes a collaborative, synergistic environment where firms can leverage each other's strengths to improve efficiency and eliminate redundancy.

Instead of building their own warehouses, startups can lease space in shared logistics hubs or even within existing distribution centers. These shared facilities often come with built-in amenities, such as security, loading docks, and access to advanced warehouse management systems (WMS), which would otherwise require significant capital investment. Similarly, instead of managing their own fleets of vehicles or hiring in-house staff for logistics tasks, startups can access third-party logistics (3PL) services. These services include transportation, warehousing, inventory management, and order fulfillment, allowing new firms to scale operations without incurring the upfront costs of fleet acquisition or maintaining a physical infrastructure. This flexibility reduces fixed costs and allows startups to adapt to fluctuations in demand, all without worrying about capacity constraints.

These interactions often occur through networking events, mentorship programs, and industry conferences within innovative ecosystems. For instance, a logistics startup may attend a workshop on sustainable transportation solutions hosted by a local university or a logistics tech incubator, gaining valuable insights on how to reduce fuel costs or implement green supply chain practices. These opportunities help startups to improve operational efficiency and adapt to market changes, including shifting customer demands, technological advancements, and regulatory requirements. By sharing resources and knowledge, innovative ecosystems provide startups with a strong foundation for success, reducing financial risks and complexity, fostering innovation, and helping companies stay competitive in a rapidly evolving market.

3.2. Financial support and investment access

Financial constraints represent a significant hurdle for logistics startups, often hindering their ability to scale operations and compete in the market. However, innovative ecosystems play a crucial role in alleviating this challenge by improving access to funding and investment opportunities. Within such ecosystems, governments, banks, corporations, and industry investors provide funding through grants, subsidies, low-interest loans, and venture capital. For instance, governments may establish dedicated start-up funds or innovation grants specifically aimed at encouraging logistics businesses to innovate and expand, thus reducing initial financial burdens [3].

In many logistics clusters, local authorities create favorable conditions for entrepreneurship by offering tax incentives, investment subsidies, and direct financial assistance, which lower financial risks and attract private investors [9]. For example, some regional governments offer tax relief for logistics startups investing in sustainable technologies, like electric vehicles or green warehousing

solutions. Such incentives not only enhance profitability but also align with broader environmental goals, further attracting funding from impact-driven investors. The presence of a diverse set of firms and supporting organizations within an innovative ecosystem also increases the visibility of startups. As businesses collaborate and share knowledge, they become more visible to potential investors. Innovative ecosystems foster networking, where investors connect with startups through events like pitch competitions, industry conferences, and investment forums.

Moreover, innovative ecosystems often include specialized incubators and accelerators for the logistics sector, providing financial and non-financial support, including seed funding, mentoring, industry expertise, and guidance to help startups refine their business models and attract investment. They also connect startups with venture capitalists and angel investors. For example, a last-mile delivery startup might collaborate with an accelerator for funding, scaling advice, and exposure to key logistics tech investors. This support structure increases startups' chances of securing funding, scaling efficiently, and thriving in a competitive market. In contrast, isolated startups often struggle to access capital and grow due to limited visibility and networking opportunities.

3.3. Policy support and institutional environment

Policies and institutions shape logistics startups' environment. In this context, the government sets clear rules, reducing uncertainty and improving efficiency. These policies like standardized customs procedures, licensing regulations, and safety standards help logistics startups minimize operational risks and lower compliance costs. For example, streamlined customs clearance enables faster, more reliable cross-border shipments, crucial for e-commerce and international trade. Besides, regulatory frameworks that promote digitalization, automation, and innovative technologies encourage startups to adopt advanced logistics management systems, IoT-enabled tracking, and AI-driven demand forecasting, fostering technological innovation within the sector [6].

In addition, government participation in innovation ecosystems frequently encompasses targeted investments in education and workforce training. Logistics startups benefit from a steady flow of skilled workers in supply chain, warehousing, and new logistics technologies. Through initiatives such as university partnerships, vocational training, and industry certifications, startups develop a workforce that strengthens their operations and competitiveness. Besides, policy support includes financial and non-financial incentives that complement institutional quality. Governments may offer tax breaks, grants, or subsidies for startups adopting sustainable logistics solutions, such as electric delivery vehicles or energy-efficient warehouses. And these incentives cut costs and help startups support national goals such as green practices and digitalization.

Furthermore, innovative ecosystems foster predictable and supportive institutional environments by coordinating interactions among multiple stakeholders, including local authorities, industry associations, and research organizations. This support network gives logistics startups guidance on regulations, access to public infrastructure, and practical insights, helping them handle institutional requirements and focus on growing their business. By combining regulatory clarity, skilled human capital, and targeted incentives, innovative ecosystems enhance the long-term sustainability and scalability of logistics entrepreneurship, ensuring that startups can survive, innovate, and expand in dynamic market conditions [1].

4. Logistics clusters as a key form of innovative ecosystems

4.1. Functions of logistics clusters

Logistics clusters lower costs, boost service efficiency, and foster innovation for logistics startups [5]. And these clusters are geographic concentrations of ports, warehouses, freight forwarders, and logistics service providers, generating agglomeration economies that benefit all [10]. Thus, firms within clusters enjoy reduced transportation and inventory costs, faster information exchange, easier access to specialized suppliers, and shared labor pools, all of which help logistics startups optimize operations and scale more quickly. Moreover, clusters foster innovation via collaboration and competition, as proximity enables firms to tackle operational challenges together, experiment with new technologies, and continually enhance service quality. This dynamic environment not only accelerates learning and knowledge transfer but also provides a supportive ecosystem for startup growth and resilience.

4.2. Limitations of logistics clusters

The advantages of logistics clusters are clear, yet they give rise to challenges that require careful management. Firstly, governance can be a major issue. Without effective coordination among actors, clusters may fail to deliver promised benefits to startups. For instance, unequal access to resources may favor large firms over small entrepreneurs [1]. Secondly, regional inequality presents another challenge: successful logistics clusters are often concentrated in economically developed regions, leaving startups in less-developed areas with limited ecosystem support [9]. Moreover, overreliance on clusters may amplify vulnerability to local shocks, such as policy shifts or infrastructure failures. Consequently, these limitations highlight the importance of effective governance and balanced development within innovative ecosystems. Logistics clusters must be carefully managed to ensure inclusive and sustainable support for entrepreneurship.

5. Conclusion

This paper has examined how innovative ecosystems help logistics startups start and develop new businesses. Through a review of existing literature, the study shows that innovative ecosystems play an essential role in logistics entrepreneurship by mitigating entry barriers, sharing resources, and improving the institutional environment. The analysis highlights several key mechanisms through which innovative ecosystems support logistics startups. Firstly, shared infrastructure and services lower capital requirements and operational risks. Secondly, financial support and investment access improve the ability of startups to secure funding. Thirdly, policy support and institutional quality create a stable and predictable environment for logistics entrepreneurship. Meanwhile, it notes that innovative ecosystems are not without limitations. Specifically, challenges like poor governance, regional disparities, and coordination issues may reduce the effectiveness of logistics clusters and other ecosystems. Thus, the success of logistics entrepreneurship depends both on the availability of resources and on their organization and management. Overall, this paper contributes to a deeper understanding of the relationship between innovative ecosystems and logistics entrepreneurship. In addition, future research could further explore digital logistics ecosystems, platform-based models, and cross-country comparative studies. For policymakers and entrepreneurs, building and actively participating in efficient innovative ecosystems remains a key strategy for promoting sustainable logistics entrepreneurship.

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