

Navigating the Startup Innovation Ecosystem: Strategies for Effective External Resource Management

Prakash Kumar Gautam¹ and Sushmita Gautam²

Abstract

This research examines how innovation ecosystems facilitate startup innovation across the creation, development, and market phases. We analyze the roles of diverse ecosystem actors, emphasizing their contributions to resource dynamics using the case method approach. Semi-structured interview-based data was analyzed using content analysis. The study revealed the significance of the strategy of using external resources for the success of startups. During the creation phase, non-market-oriented entities like universities and incubators support startups with crucial early-stage R&D funding and business model formulation. In the development phase, startups refine their products with backing from accelerators, investors, and customers, utilizing innovation resources for prototyping and validation, and transitioning into the market phase, startups scale operations with market-oriented actors, focusing on organizational readiness and leveraging established business models for growth. Throughout these phases, startups balance exploration and exploitation strategies, enabling innovation ambidexterity. Our findings highlight how innovation ecosystem actors provide essential resources—physical, social, financial, and human—that foster startup resilience and maturity. Grounded in the Resource-Based View framework, this study offers empirical insights into strategic adaptations within innovation ecosystems, illustrating their transformative impact on startup success.

Keywords: innovation ecosystems, market-oriented actors, resource dynamics, external resources, innovation ambidexterity

Introduction

As defined by Al-Mubarak and Busler (2017), a startup is a new venture that seeks to establish a feasible business model through innovative solutions. This innovation, characterized by the creation of new products by fusion of physical, digital, and biological technologies, has not only changed but also transformed the business

¹ Corresponding concerning this article should be addressed to Prakash Kumar Gautam, Faculty of Management, TU. Email: prakash.gautam@sdsc.tu.edu.np

 <https://orcid.org/0000-0002-2197-3851>

² Research Scholar. Email: write.at.sushmita@gmail.com

ecosystem globally. Startups, as proven by Marcon and Ribeiro (2021), are not just new ventures but also significant economic drivers (Colombelli & Quatraro, 2019). However, they often face resource constraints (Pe'er & Keil, 2013). This is particularly challenging when implementing technology-led business innovation and growth, especially in underdeveloped and developing economies (Kasabov, 2015).

Innovation is a cornerstone of competitiveness and growth in the competitive business world, as startups must compete with new ventures and large corporate businesses. Startups have unique challenges in managing innovation due to resource constraints (Marcon & Ribeiro, 2021), rapid technological advancements, and evolving customer expectations (Zahra, 2021). Effective innovation management drives product development and influences strategic decision-making and market positioning (Marcon & Ribeiro, 2021). The innovation ecosystem leverages effective innovation management in the business (Bandera & Thomas, 2019). It interconnects networks of individuals, organizations, institutions, and resources that collectively work to innovate and bring new ideas, products, or services to execution. It encompasses various components and stakeholders contributing to innovation, fostering creativity, collaboration, and entrepreneurship. Each investor and employee, research policies and activities, government policymakers, funding agencies, culture and community, and market and customers form the innovation ecosystem. Startups need to have an effective external resource management system, however most of the startups fail in locating, acquiring, and mobilizing external resources effectively (Gautam & Gautam, 2024).

Despite the abundance of resources available within the ecosystem, startups often face several challenges in effectively managing these resources, such as resource allocation, access to talent, strategic partnerships, and market access (Kasabov, 2015; Marcon & Ribeiro, 2021). Navigating the complexities of the startup ecosystem can be daunting, particularly when managing external resources effectively. Effective navigation of this ecosystem is essential for startups looking to scale their operations and bring disruptive innovations to market. The effectiveness of startup strategies in coping with such challenges leads to success (Reynolds & Uygun, 2018). This study identifies how startups manage external resources to effectively navigate the complexities of the ecosystem, drive innovation, and achieve sustainable growth in competitive markets. This ecosystem provides startups access to crucial resources such as funding, mentorship, talent, and market opportunities.

Literature Review

Theoretical Review

Developing resources internally is usually tricky for startups (Adner & Kapoor, 2010; Gomes et al., 2018), and it demands effective external resource management. Startups must collaborate with external agencies such as suppliers, vendors, bankers, customers, incubators, and universities (Tsujimoto et al., 2018) beyond the normal expectations and practices. Such an extra effort of the exceptional startup to be advantaged for the competitive advantages is termed the innovation ecosystem, first coined by Moore (1993) as the business ecosystem and further elaborated by (Adner & Kapoor, 2010; Gomes et al., 2018). The innovative ecosystem, thus, comprehends the changing group of participants, actions, and objects, as well as the organizations and connections, which involve both supportive and alternative relationships, crucially impact the innovative success of an individual or a group of individuals (Granstrand & Holgersson, 2020). The innovation ecosystem is the collaborative creation, distribution, and benefit acquisition from innovations (Granstrand & Holgersson, 2020; Walrave et al., 2018). The innovation ecosystem strengthens the startup's supply chain and extends the opportunity for cocreation and growth potential.

The theoretical foundation of innovation management in tech startups draws from several critical perspectives. First, the resource-based view (RBV) emphasizes how startups leverage internal capabilities and external resources to innovate. Second, the dynamic capabilities framework highlights the importance of adapting and reconfiguring resources in response to market changes. Third, the diffusion of innovation theory elucidates how new technologies and ideas are adopted within startups and across markets. These theories provide a framework for understanding how startups initiate, implement, and sustain innovation processes with external resources management. Based on these, the innovation ecosystem extends its theoretical foundation with industrial ecology, business ecosystem, platform management, and multi-actor network perspective (Tsujimoto et al., 2018). This study draws the multi-actor network perspective to increase the breadth and depth of the concept (Marcon & Ribeiro, 2021; Tsujimoto et al., 2018): participation of several actors in the innovation process (breadth), and dynamics of connection among actors (depth).

Startup Growth Lifecycle. The literature suggests three life cycle phases: creation, development, and market (Fukugawa, 2018; Konig et al., 2019; Marcon & Ribeiro, 2021; Paschen, 2017; Picken, 2017). While the boundaries between these phases may sometimes be unclear or indefinite (Picken, 2017), they collectively outline the trajectory

that startups follow as they mature and plan for future stages. Startups often revisit phases multiple times to refine their product and business strategy (Peralta et al., 2020).

- **Creation phase.** In this initial phase of the startup growth lifecycle, startups apprehend the product or service they intend to develop based on identified market opportunities (Fukugawa, 2018) based on market research to assess market size and consumer behavior (Paschen, 2017). In this phase, startups often seek investments to fund research and development (R&D) initiatives (Konig et al., 2019) and operate informally with a flexible and informal organizational structure (Konig et al., 2019; Picken, 2017).
- **Development phase.** In this subsequent phase, startups establish a more structured and robust business model and iteratively refine their prototypes through market testing using minimum viable products (Marcon & Ribeiro, 2021; Picken, 2017). This phase is significant for validating both the product and its market viability. However, entrepreneurs face the dual challenge of making strategic decisions while managing operational processes (Konig et al., 2019; Picken, 2017).
- **Market phase.** Startups transition to commercializing their technology (Fukugawa, 2018), acquire a robust customer base, enter the market, scale up operations, diversify their offerings, and expand their business (Marcon & Ribeiro, 2021; Paschen, 2017; Picken, 2017). Startups engage in sales growth, expanding market share, and achieving consistent profitability to deliver returns to investors. Startups realize returns from the developed business model. During this phase, startups face the challenges of establishing market leadership and achieving a competitive scale.

Empirical Review

Empirical studies on the startup innovation ecosystem reveal diverse strategies and outcomes (Granstrand & Holgersson, 2020; Marcon & Ribeiro, 2021; Tsujimoto et al., 2018; Walrave et al., 2018). Research indicates that factors such as leadership vision, organizational culture, collaboration networks, and access to funding significantly impact innovation outcomes. Successful startups cultivate a culture of experimentation, rapid prototyping, and customer feedback integration to drive an innovation ecosystem (Sreenivasan & Suresh, 2024). However, challenges include managing intellectual property, scaling innovation beyond the startup phase, and navigating regulatory landscapes (Crnogaj & Rus, 2023). The following segments indicate the diversities in navigating the innovation ecosystem of the startups.

Startup Ecosystem Dynamics. Research emphasizes the complexity of startup ecosystems, characterized by interactions among entrepreneurs, investors, accelerators, universities, and government agencies (Audretsch & Belitski, 2017; Autio, 2021). It is

necessary to explore how startups navigate these ecosystems to access critical resources such as funding, mentorship, and market opportunities in different economies.

Resource Allocation and Management. Startup success depends on allocating and managing external resources effectively (Marcon & Ribeiro, 2021). More specifically, startups with strategies for optimizing resource utilization, including financial management practices, talent acquisition, and strategic partnerships, stand out in their competition (Paradkar et al., 2015).

Role of Incubators and Accelerators. Business incubation is the business organization that assists startups in their early development stage with idea pitching, prototyping, developing business models, and developing supply chains. Incubators and accelerators support startups through infrastructure provision, mentorship, and network access (Cohen et al., 2019; Li et al., 2020; Paradkar et al., 2015). Startups that participate in business incubation and moderators grow fast.

Collaboration and Open Innovation. Collaboration emerges as a critical strategy for startups to leverage external resources. Studies examine partnerships with other firms, research institutions, and industry experts to co-create solutions and enhance competitiveness (Rasmussen et al., 2011).

Entrepreneurial Strategies. Startups follow different strategies to navigate the entrepreneurial ecosystem. This includes networking, relationship-building, and adaptation to market dynamics (Eisenhardt & Schoonhoven, 2016). Startups must extend comprehensive multi-sector networks beyond the limited range of actors (Adner & Kapoor, 2010), primarily focusing on supply chain actors operating at a distance. A comprehensive multi-actor network approach also offers tools to examine how connections evolve among actors possessing diverse resources within a startup's lifecycle (Tsujimoto et al., 2018; Walrave et al., 2018). By implementing a strategic approach to relationship building within the innovation ecosystem, startups can leverage collective strengths, foster innovation, and position themselves for sustainable growth and success (Caicedo et al., 2023). By adapting to market dynamics, they can capitalize on opportunities, mitigate risks, and sustain competitive advantage in a rapidly evolving business environment. They can engage in continuous market research, grip agility and flexibility, collaborative innovation, strategic partnership, and technology adaptation (Ghezzi & Cavallo, 2018).

Startups' Resource Management. Startups require strategic resources to gain a competitive edge as business entities (Barney, 1991; Ireland et al., 2003; Sirmon et al., 2007), encompassing assets, information, capabilities, and knowledge indispensable for

implementing strategies that sustain competitive advantage. These resources shape firm capabilities, which are crucial for success (Chahal et al., 2020) and competitive edge (Ireland et al., 2003). Innovation, closely linked to deploying resource bundles, facilitates developing and commercializing new or enhanced products and services (Ireland et al., 2003; Lofsten, 2016). Various theoretical contributions in Resource-Based View (RBV) literature identify vital resources (human, financial, social, physical, organizational, and innovation resources) for competitive advantage. Financial resources involve monetary assets often sourced in startups from families, venture capitalists, owners' capital, or accelerators (Ireland et al., 2003; Sirmon et al., 2007). Human resources (HR) encompasses team training, experience, intelligence, and insights, which are critical for a company's skills and knowledge, thus influencing the strategy deployment (Fukugawa, 2018; Ireland et al., 2003). Innovation resources permit firms to invent novel products and procedures, emphasizing routines and processes to develop and exploit market offerings (Lofsten, 2016). Organizational resources, i.e., business resources, encompass a company's formal and informal structures, including control mechanisms, planning processes, and coordination systems (Barney, 1991; Lofsten, 2016). Social resources include enduring inter-firm and intra-firm networking associations (Fukugawa, 2018 & Ireland et al., 2003), which are crucial in Innovation Ecosystem (IE) contexts where external actors share resources (Adner, 2016). Physical resources (Barney, 1991) are a company's physical technologies, facilities, and equipment and are often utilized in startup IE settings like incubators or university laboratories for prototyping. Sirmon et al. (2007) extended Barney's RBV with Resource Management Theory (RMT), emphasizing how startups structure their resource sets, package resources to advance capabilities and leverage them for sustained value creation. The acquisition and management of resources are the foundations of competitive advantage (Hitt et al., 2016; Sirmon et al., 2007). RMT involves three core progressions: resource constructing, bundling, and leveraging (Sirmon et al., 2007). Resource constructing includes achievement, growth, and divestment, defining a firm's resource portfolio as all owned, controlled, or accessed (Ireland et al., 2003; Sirmon et al., 2007). Resource bundling manages resources through subprocesses, which are crucial micro-foundations within RMT. Resource leveraging mobilizes, coordinates, and deploys capabilities within a firm's processes and strategies, essential for capability exploitation, value creation, and sustained competitive advantage. In startup innovation ecosystem environments, external resources complement internal ones (Priem et al., 2013), enabling innovation and addressing resource gaps (Fukugawa, 2018). Involvement in an innovation ecosystem expands resource deployment options beyond internal portfolios, broadening strategic possibilities (Ireland et al., 2003). External financial resources, sourced from innovation ecosystem actors, are critical for startup strategy implementation.

Research Objectives and Conceptual Framework

The study's primary objective is to provide a comprehensive impression of how startups engage with the innovation ecosystem by utilizing its resources to drive innovation. Further, this research extends Resource Management Theory (RMT) to explore how startups leverage the innovative ecosystem to overcome internal resource limitations crucial for innovation (Fukugawa, 2018). This study emphasizes that managing resources is significantly influenced by external environmental factors affecting resource availability and deployment (Sirmon et al., 2007). RMT and the innovation ecosystem framework provide insights into how innovation ecosystem resources impact startup innovation and how startups effectively manage these resources. The research framework expands RMT to incorporate startups' management of internally owned and externally accessible resources, aligning with propositions from Ireland et al. (2003) and Priem et al. (2013), integrating the Resource-Based view (RBV) of Barney (1991). This study argues that startups' interactions with innovation actors shape resources as valuable, rare, non-substitutable, and difficult to imitate (Fukugawa, 2018).

Central to RMT are managerial actions involving resource organizing, bundling, and leveraging to align with strategic objectives. The conceptual framework integrates these RMT processes with the multi-actor network perspective across different startup lifecycle phases—creation, development, and market entry. It explores how these resources are bundled through resource management subprocesses and firms' operational steps to consolidate structured resources.

Methodology

The study aims to develop theory by exploring the interplay between startups' lifecycle stages, the innovation ecosystem, and Resource Management Theory (RMT). The objective is to empirically ground the understanding of how startups navigate external resources through their lifecycle phases. To achieve this, this study adopted an empirical case study approach (Voss et al., 2002). This approach allows for the systematic observation of real-world phenomena, thereby establishing connections between variables and stakeholders (Voss et al., 2002), providing a reliable basis for our research. Following guidelines suggested by Voss et al., we conducted a study involving multiple startup cases. This approach facilitated a comprehensive examination of how startups interact with the innovative ecosystem across different lifecycle stages.

Case Study Selection

As Eisenhardt and Graebner (2007) and Marcon and Ribeiro (2021) suggested, we adapted a theoretical sampling approach for selecting cases. Our target population

comprised startups established in the manufacturing and service sectors initially to operate in Kathmandu Valley. We first identified startups in person, and with the help of networking, i.e., snowball sampling, because of the lack of an accurate database of the startups, we filtered active startups engaged in their respective innovation ecosystems. To ensure the relevance of selected startups within their innovative ecosystem, we contacted them in person, explaining our research objectives and being inquisitive about their connections with innovation ecosystem actors and readiness to participate in the research. We assured participants to analyze their information in aggregate rather than at an individual level. Ultimately, we selected fifteen startup cases active in the innovation ecosystem from each lifecycle phase, capable of providing pertinent information for our investigation (Voss et al., 2002). Our sample cases included three startups in the creation phase (Cases 1, 6, and 11), two in the development phase (Cases 2, and 12), and the rest of them in the development and market phase. We determined the startup lifecycle phases through theoretical inquiry and confirmation of the startups.

Table 1
Sample Cases for Interview

Startup Cases	Sector	Description (lifecycle phase)	Interviewee(s)
2, 12	Health products	A startup that develops health products. (development phase)	- Founder CEO - Sales Manager
4, 5	Agriculture	Agricultural technology startup (development and market phase)	- Founder CEO
1	Electric bike	Startup that develops electric bikes (creation phase)	- Founder CEO
8, 9	Energy	Development of clean energy products/solar (development & market phase)	- Founder CEO
7, 10	Biotechnology	biodiversity conservation, genetics, molecular biology, and biotechnology (development & market phase)	- Founder CEO
7, 13	Payment Solution	Financial services & payment solutions. (development & market phase)	- Consumer Relationship Officer
6	Food delivery services	A food delivery service. (creation phase)	- Business Manager
14	Digital wallets	A digital wallet and payment gateway (development & market phase)	- Business Relations Manager
11	e-Commerce platform	An e-commerce platform offering discounted prices. (creation phase)	- Business Developer
12, 15	Ridesharing	Ride-sharing platform (development & market phase)	- Operation Manager

Data Analysis and Interpretation

As Marcon and Ribeiro (2021) suggested, we analyzed and interpreted the data into three main stages: preliminary analysis, content analysis, and data processing and interpretation. We transcribed the interviews initially, and the transcripts from each case were reviewed and discussed with the researchers in the preliminary analysis stage based on the interview notes, field visit records, and documents. A research codification protocol was developed for content analysis, and adhered to this protocol while analyzing each case.

We thoroughly evaluated each case, employing a codification protocol for all lifecycle stages. Using coding methodologies, we identified stakeholders, subprocesses, and capabilities, assessing the frequency and importance of responses from respondents. Our analysis focused on understanding how firms combined these resources, emphasizing the dynamics of bundling resources. We also examined the capabilities that startups developed during each phase through resource bundling, highlighting how they leveraged these resources effectively. Finally, we conducted detailed analyses within and across cases to process and interpret the data, aiming to identify recurring patterns and insights.

Results

Innovation ecosystems have gained increasing attention among innovation theorists and practitioners. Our findings emphasize the importance of the innovation ecosystem in driving startup innovation, primarily due to the dynamics of resource exchange. The study explored diverse actors in the innovation ecosystem of the startup, namely incubators, fund providers, human resource suppliers, consultants and mentors, government/regulators, suppliers, business associations, accelerators and creditors, R&D firms and competitors, consumers, and pressure groups. Based on the categorization suggested by Reynolds and Uygun (2018), our research identified that non-market-oriented participants in startup innovation ecosystems include universities, business incubators, consultants, mentors, business associations, and governmental regulatory bodies. In contrast, market-oriented participants encompass suppliers, research and development firms, competitors, customers and pressure groups, accelerators, investors, and funding agencies. Startups frequently opt to leverage resources from ecosystem actors strategically, prioritizing resources aligning with their core business activities.

Creation phase. During the creation phase, startups use ideation to conceptualize their proposed solution. Our analysis of various cases reveals that startups typically require *financial resources* to initiate research and development activities and to establish their

business structure. They consolidate human resources by *training their staff* and integrating university *interns and trainees*. Few startups, especially those in production and manufacturing, benefit from incubators. Who typically engage more actively during the development and market phases and enjoy working with consultants and mentors. Startups integrate resources from incubators, consultants, mentors, and business associations to *refine their business models and acquire essential business and management expertise*. This support is crucial for startup founders lacking in-depth management knowledge, with incubators and mentors offering training and consultancy services to bridge this gap. Innovation resources are bundled to facilitate research and development, providing insights on design and materials and defining product requirements, which enabled the company to *anticipate technological advancements* and strategically plan its business model. On the other hand, *customer innovation resources* aid in defining product requirements, testing prototypes, gaining product insights, refining product specifications, and aligning solutions with market demands.

Additionally, *startups consolidate social capital* from universities, incubators, consultants, mentors, business associations, government entities, and regulatory bodies to expand their stakeholder network within the innovation ecosystem. While financial, human, physical, and organizational resources are pivotal for startups in the initial creation phase, especially for *conceiving business models and securing R&D funding*, our research highlights the strategic *bundling of innovation and social resources* from the innovation ecosystem. This strategic bundling is a testament to the depth of planning and execution by startups. Innovation resources are employed for product conception and design, whereas social resources are *utilized to foster collaborations and engage with ecosystem actors* in subsequent phases.

Development phase. During the development phase, startups, often still in incubation, *focus on prototyping their products and refining their business models*. They pool financial resources from accelerators, investors, and funding agencies to support their R&D processes, a crucial stakeholder contribution. This financial support is instrumental in establishing initial revenue streams from product sales. *Funding agencies also provide financial support to help startups build manufacturing capabilities*. *Human resources are sourced* from incubators, consultants, mentors, and accelerators to train staff and enhance business skills. Similar to the creation phase, startups integrate university interns and trainees to advance product development with their technical expertise. *Physical resources provided by incubators* play a critical role in preparing manufacturing infrastructure and providing necessary facilities. Incubators collaborate to facilitate product testing, while competitors and other firms collaborate with startups to design and test prototypes. Customers, particularly in B2B contexts, offer on-site testing

environments, providing valuable insights into product requirements and performance. *Innovation resources are consolidated* to define product specifications, conduct prototype testing, and validate product feasibility. Suppliers' innovation resources are integrated to co-design product components and improve quality. Startups also leverage innovation resources for co-patenting solutions and supporting product development. Consultants contribute to refining product designs and providing expertise in product development. Social resources from various ecosystem actors are bundled to expand startups' networks, with startups leveraging mentors and acceleration programs. *Social resources aid in building credibility* for collaborative development and testing and address skepticism about complex technologies. Our findings demonstrate that startups prioritize effective management of innovation and social and organizational resources from the innovation ecosystem during the development phase. Innovation resources are directed at prototyping and validating products, while social resource management focuses on expanding networks and enhancing reputation. Organizational resources are utilized to structure operations and refine business models.

Market phase. The market phase represents the stage where startups successfully introduce a validated product to consumers. During this phase, startups expand their customer base and scale their venture according to the business model defined in earlier phases. Complementors emerge as crucial actors in this phase, providing value by reselling the innovation and offering maintenance support. Meanwhile, competitors and other startups *collaborate by sharing physical resources*.

In contrast to earlier stages, financial resources during the market phase primarily derive from customer revenues, complements, and funding earmarked for infrastructure expansion by agencies. Our research underscores the ongoing importance of human resources in this phase. *Startups enlist university interns and trainees to bolster their workforce* and rely on consultants to equip their staff for the distinct challenges of the market phase, distinct from those encountered in earlier creation and development phases. Organizational resources previously dedicated to developing the business model now pivot towards refining and enhancing it, supported by consultants who impart critical business and management expertise. Innovation resources in the market phase differ from those in development. While the latter focused on creating new solutions and defining product requirements, resources in the market phase concentrated on refining existing solutions and broadening the product and service portfolio. Startups predominantly *access resources from suppliers and customers during this phase*. Customers offer invaluable insights from rigorous testing and feedback, while complementors, closely linked with customers, provide ongoing feedback on innovations. *Government entities and regulators retain their role in crafting policies*

supporting entrepreneurship and innovation, while suppliers collaborate with startups to enhance product designs for future iterations. Socially, startups intensify efforts to expand their network among market players while continuing to *draw social resources from non-market actors*. Business associations enhance visibility and investor access, and accelerators provide mentorship to build a credible reputation.

Discussion and Limitation

Our findings affirm the proclamations of Fukugawa (2018) regarding the fundamental role of innovation ecosystems in providing crucial resources to startups. These resources enable startups to mitigate the challenges (Priem et al., 2013) of being "new and small" (Raju et al., 2011) by facilitating access to organizational, social, and innovation resources. Innovation ecosystem actors contribute significantly to startups' knowledge acquisition, enhancing their organizational maturity (Marcon & Ribeiro, 2021; Raju et al., 2011). Moreover, such actors provide physical, social, financial, and human resources instrumental during the creation and development phases. The study provides initial empirical evidence on how the innovation ecosystem evolves across startups' lifecycle phases within a Resource-Based View (RBV) framework. The impactful operation of the startup needs to identify the actors, resources, and capabilities. This study extends the findings of Reynolds and Uygun (2018) and Marcon and Ribeiro (2021), underscoring how non-market-oriented actors support and facilitate interactions crucial for startups' development, spanning innovation, organizational, and social resources. These actors play pivotal roles in the creation and development phases by contributing to human, physical, and financial resources.

We suggest that startups shift their roles in resource exploration and exploitation. In the creation phase, startups are closely aligned with non-market-oriented actors like universities and incubators, crucial for early-stage R&D funding, network establishment, and business model ideation. Thus, resource management dynamics in this phase align with the exploration part of R&D. Exploration modes in the innovation ecosystem enable startups to experiment with product design, identify market opportunities, and learn about customer needs (Marcon & Ribeiro, 2021). This model is reinforced by groupings formed to acquire knowledge about the developed solutions. The capabilities developed during this phase, such as sensing, learning, innovation, and agility, support startups' exploration efforts, shaping their business model value proposition.

Conversely, in the development phase, startups refine their business models and validate products (Picken, 2017; Marcon & Ribeiro, 2021). Our findings indicate a transitional phase in which startups engage in exploration and exploitation groupings. Exploration groupings focus on refining product prototypes and exploring business model options

established in the creation phase, while exploitation groupings aim to commercialize products, enhance manufacturing capabilities, and scale operations (Marcon & Ribeiro, 2021).

During the market phase, startups prioritize developing organizational readiness and scaling their businesses. Resource bundling in this phase shifts predominantly towards market-oriented actors who provide practical knowledge and support for scaling operations. However, startups continue to leverage earlier exploration alliances, demonstrating innovation ambidexterity to foster new offerings while leveraging established business models for growth. Our findings align with Cho et al. (2020) in highlighting strategic variations among startup-born firms. Specifically, the innovation ecosystem enables startups to adopt an ambidextrous strategy during the market phase, balancing exploration and exploitation efforts.

Our study's limitations include its focus on startups within a developing country context. Future research could broaden this scope to include service and software startups, which may interact differently with IE actors due to their earlier customer engagement and lower prototyping costs. Additionally, investigating how startups manage internal resource scarcity amidst external resource availability and exploring incentive mechanisms that influence relationships with IE actors could provide further insights into startup dynamics.

Conclusion

Our research provides compelling evidence supporting the proclamation regarding innovation ecosystems' crucial role in providing essential resources to startups. As our study demonstrates, these resources are not just theoretical concepts but practical tools that can help startups overcome inherent challenges, such as the *new and small*. By facilitating access to organizational, social, and innovation resources, innovation ecosystem actors significantly contribute to startups' knowledge acquisition and organizational maturity, while also providing vital physical, social, financial, and human resources during the creation and development phases.

Based on the Resource-Based View (RBV) framework, this study demonstrates how startups progress through different lifecycle phases by identifying and leveraging the innovation ecosystem's actors, resources, and capabilities. Importantly, this study highlights the supportive and enabling roles played by non-market-oriented actors, such as universities and incubators, throughout the developmental stages of startups. As the research shows, these actors play crucial roles in the creation phase by facilitating early-

stage R&D funding, fostering network development, and assisting in formulating business models.

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