Evaluating the Effectiveness of Startup Incubators and Accelerators in Bridging the Gap Between Innovation and Market Readiness

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Abstract

Incubators and accelerators have become essential elements of current entrepreneurial ecosystems, aiming to address the problem of market readiness, which appears at the stage when innovations get ready to enter the market. Although they are widely used tools among entrepreneurs all over the world, there is not much knowledge on their efficiency, and, in particular, how they contribute to the process of transforming innovations into market-ready ventures. This paper investigates the influence of incubators and accelerators on startup market readiness via the mediating effect of innovation commercialization capability. The quantitative cross-sectional design and survey method were applied in this study. The sample included 240 respondents (N = 240) who took part in incubator and accelerator programs in different areas. Data collected in the survey were analyzed using the Structural Equation Modeling (SEM). The results show that the intensity of an accelerator program has more direct influence on market readiness (β =0.51, p <0.001) compared to the quality of incubator support (β = 0.42, p <0.001). Innovation commercialization capability was identified as a mediator with a significant indirect effect (β =0.58, p < 0.001), thus confirming the critical mediating role of innovation commercialization capability in innovation inputs to output conversion. Mentorship and networking were among the most influential support mechanisms affecting innovation commercialization capability, followed by access to funding. Measurement quality was assured by conducting reliability and validity tests. The Cronbach's alpha values ranged between 0.84 and 0.90, and the AVE exceeded 0.60 for all variables. It is concluded that both incubators and accelerators are complementary support mechanisms within entrepreneurial ecosystems. While incubators enhance innovation capability at early stages, accelerators promote scaling and entering the market. Contribution to Resource-Based View and Dynamic Capabilities theory is discussed in the following section.

Keywords

Startup Incubators, Accelerators, Market Readiness, Commercialization Capability, Entrepreneurship Ecosystems, Startup Performance.

1. Introduction

Innovation ecosystems have been a pivotal aspect of the process of growth via innovation in the world's economies, whether mature or emerging (Panakaje et al., 2024). The past few years have seen an accelerated trend toward entrepreneurship in the global economy, as a result of technology advances, digitization, and the availability of capital. Entrepreneurs' companies have been acknowledged as key players in job creation, productivity gains, and innovation. Startups bring new products, services, and approaches that change existing industry paradigms and trigger competition. Nonetheless, it should be noted that a high percentage of startups do not survive their early development phase because of problems in scaling innovations to commercial success (Amelia et al., 2021).

The problem of innovation-readiness gap remains one of the critical drawbacks of entrepreneurial ecosystems. Despite the presence of innovative companies in any ecosystem, there can be challenges regarding marketing, communicating with potential consumers, regulation issues, etc. Thus, the innovation-readiness gap requires the emergence of incubators and accelerators in ecosystems.

Nevertheless, the efficiency of using incubators and accelerators as instruments that could help improve the performance of startups has not been confirmed empirically yet. The previous results of research are controversial, as some researchers confirm the beneficial influence of incubators and accelerators on the growth and survival rates of startups, while others argue about their ineffectiveness. That is why it is necessary to conduct further research to reveal how the support system helps to close the gap.

The current paper aims at evaluating the effectiveness of startup incubators and accelerators in terms of enhancing market-readiness. Besides, it seeks to investigate the process of functioning of these types of support systems and determine the key factors that affect the scaling of the startup.

Research Questions

- How do startup incubators influence the market readiness of early-stage ventures?
- What role do accelerators play in improving startup scaling and commercialization?
- Which support mechanisms (mentorship, funding, networking) are most effective in bridging the innovation–market gap?
- How do incubators and accelerators differ in their impact on startup performance outcomes?

This paper is structured into seven sections. Section II explores existing empirical studies on the entrepreneurship ecosystem, entrepreneurship, and innovation. Section III presents the conceptual framework and develops the research hypotheses that explain the relationships among the study variables. Section IV describes the research design and methodology, including data collection and the SEM methodology. Section V presents the results and analysis, including reliability analysis, validity assessment, and hypothesis testing results. Section VI discusses the findings. Finally, Section VII summarizes the results and provides practical implications, limitations, and future research scope

2. Literature Review

As far as the current research goes, the significance of incubators and accelerators for fostering innovation and creating market readiness is repeatedly highlighted. It is noted that such mechanisms should be viewed as structured ecosystems, as they provide mentorship, financing, and networking opportunities to improve the performance of entrepreneurs. According to this research literature, incubators and accelerators significantly increase the survival rate of ventures owing to the guidance given, but it is effective depending on the way the program and the ecosystem develop (Leitão et al., 2022; Hakim et al., 2024). Similarly, another study conducted through meta-analysis reveals that an accelerator program positively affects the growth and scaling of ventures, especially technological ones (Assenova & Amit, 2024; Tricahyono et al., 2018).

Recent empirical evidence from case studies indicates the crucial role of incubation programs in fostering innovation at the initial stage by providing resources and reducing uncertainty (Peniaz, 2023; Kaggwa et al., 2024). Nevertheless, these studies point out that innovation incubation does not seem to be enough to commercialize ventures without additional acceleration. The study can further support this claim by showing that the commercialization success of ventures depends largely on ecosystem fit and market-oriented mentorship (Selig, 2014; Yusubova & Clarysse, 2016; Madaleno et al., 2022).

Other works focus on the importance of intellectual capital and systematic benchmarking in incubators (Hasenauer et al., 2016; Hudakova et al., 2019). The study stresses the importance of knowledge sharing systems and the organization's learning capacity in terms of the effectiveness of incubators, whereas other research emphasizes team competencies and sustainability-related skills as crucial factors influencing startups' success

during the incubation process (Calza et al., 2014; Hudakova et al., 2019). Accelerators are further noted as the key mechanism for overcoming the pioneer gap between innovation and market entry (Lall et al., 2013; Bodolica & Spraggon, 2021).

Furthermore, the importance of the selection process and academia-industry collaboration in improving the outcome of the incubation process is stressed in other research (Stana et al., 2024; Capatina et al., 2023; Madaleno et al., 2022). Moreover, the importance of digital learning and skill development as the crucial drivers of innovation readiness is underlined in this research (Prokopenko et al., 2024).

However, it is clear from the literature review that there is a need to bridge the gap regarding the mechanisms through which this is achieved, specifically innovation commercialization capabilities, which this paper attempts to achieve by combining the two support methods into one framework.

3. Conceptual Framework

This conceptual framework is drawn from an attempt to study the importance of incubators and accelerators in helping innovation link to the market-readiness aspect. The model encompasses the key support systems made available in the entrepreneurial ecosystem program and the impact of the system on the performance of the startup.

Some of the independent variables that constitute this conceptual framework are quality of incubator support, intensity of an acceleration program, mentorship and networking, and funding opportunities. The quality of incubator support entails the effectiveness of early-stage support, which includes infrastructure support, advice, and technical support. The intensity of the acceleration program entails the extent of intervention made towards the growth of the startups via market entry and rapid scale-up.

The mediator variable is the innovation commercialization capacity that refers to the ability of the startup to commercialize its innovation by turning them into products or services for commercialization. The mediator variable is very significant since it bridges the gap between the support system and the performance variables since it signifies the creation of internal capabilities in startups.

The dependent variable is market readiness or performance of the startup and may be measured using such aspects as product launch, customer acquisition, scalability, and generating revenues.

Based on this framework, the study proposes the following hypotheses:

- **H1:** Incubator support positively influences market readiness.
- **H2:** Accelerator participation improves scaling capability.
- **H3:** Mentorship and networking strengthen innovation commercialization capability.
- **H4:** Funding access positively influences innovation commercialization capability.
- **H5:** Innovation commercialization capability positively influences market readiness and startup performance.

This framework shows how entrepreneurial support networks encourage innovation to generate sustainable competitive advantage.

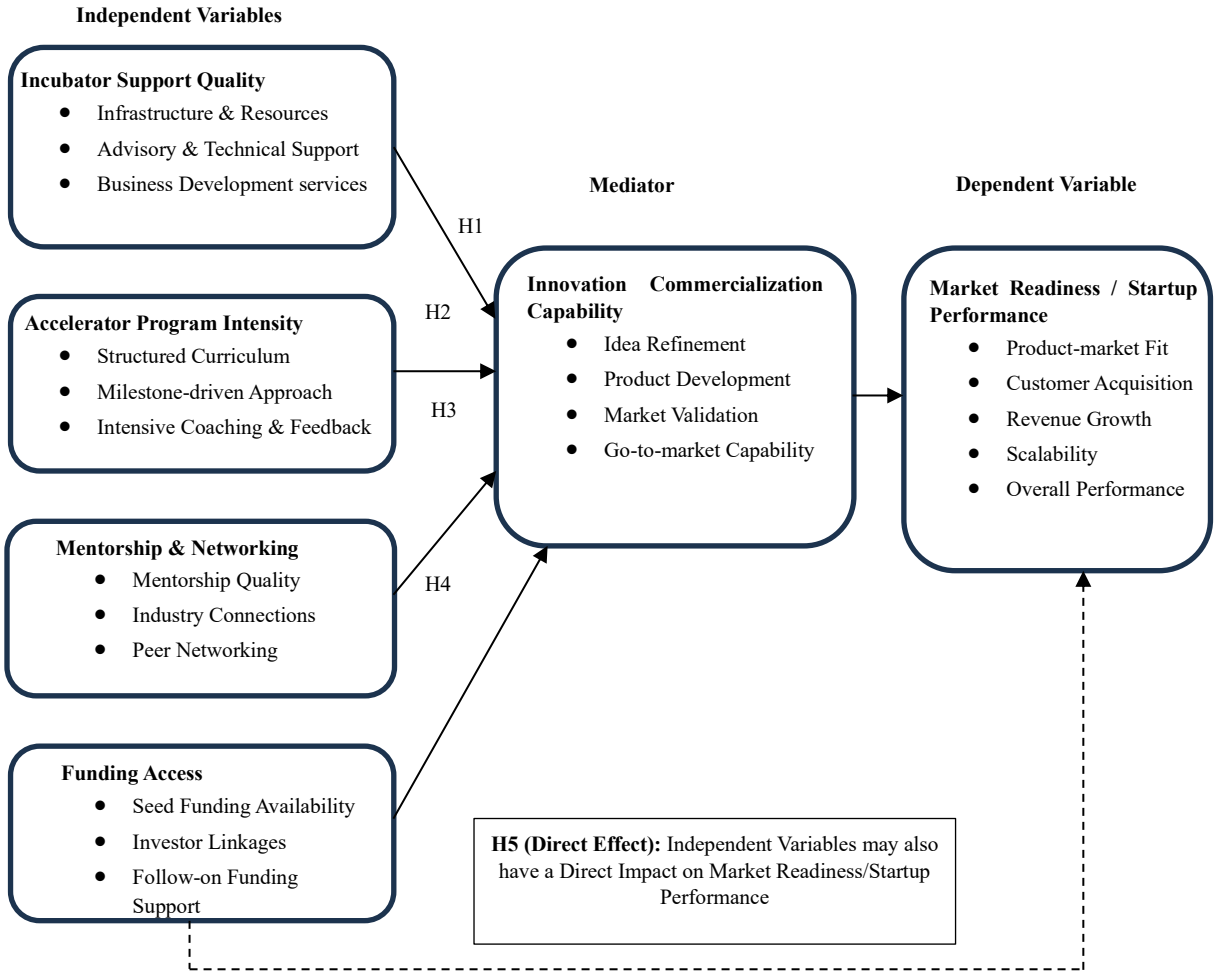

Fig. 1: Proposed conceptual framework on the role of incubators and accelerators in enhancing startup market readiness

Fig. 1 displays a conceptual framework that illustrates the relationship between incubator/accelerator support and improved market readiness and entrepreneurship performance. The figure outlines the impact of four major independent variables (quality of incubator support, intensity of an accelerator program, mentorship and networking, and access to funding) on innovation commercialization capability as a mediator construct. Innovation commercialization capability is an essential variable that helps to facilitate the commercialization of innovations by making them market-ready. The figure also illustrates both direct and indirect impacts of these support systems on startup performance results such as product-market fit, customer acquisition, revenues, and scalability.

4. Research Methodology

In order to analyze the effectiveness of startup incubators and accelerators in closing the innovation-to-marketability gap, a quantitative cross-sectional research design are used in this study. A survey method is employed in gathering data from entrepreneurs enrolled in entrepreneurial programs through the use of questionnaires. It is an ideal approach for studying the relationship between several latent variables, including incubator support, accelerator intensity, and innovation commercialization capability.

Sample and Data Collection

The target population in this research includes startups in their initial phase of operation in various sectors such as technology, services, and products within incubators and accelerators. The data are gathered from

those persons responsible for the development of the startups and making decisions concerning the process, such as the founders, the co-founders, and the managers in the programs.

The researcher used a stratified purposive sampling method, whereby respondents are stratified according to their involvement in either an incubator program or an accelerator program. The total number of respondents in this research is 240, and they are from incubator and accelerator programs. This sample size is adequate for SEM.

Data are collected using a well-formulated questionnaire administered through the incubator network, start-up hubs, entrepreneurial development centers, and digital entrepreneurial platforms. The sample are chosen based on set criteria of inclusion, which include having actively participated in an incubation or acceleration program for a period of at least six months. It guarantees that the participants have enough interaction with the different support mechanisms offered by the incubation or acceleration program so that can respond effectively.

The collected data are analyzed statistically for any relationship existing between support mechanisms offered by the incubator or acceleration program, the ability to commercialize innovations, and market readiness outcomes.

Variables and Measurement

All constructs are evaluated using the five-point Likert scale. Independent variables are incubator quality support, accelerator program intensity, mentorship and networking, and access to funds. Innovation commercialization capacity is the mediating variable that denotes the start-up's ability to translate ideas into market-ready products. The dependent variable, readiness for the market, are measured through product launch, acquisition of customers, and generation of revenues.

Analytical Tools

The analysis of the gathered data are conducted using SPSS and AMOS/SmartPLS. The measurement of reliability and validity are performed using Cronbach's alpha, composite reliability, and confirmatory factor analysis (CFA). For testing the relationship between the various variables, the structural equation modeling (SEM) are employed, while the regression analysis are serve as a backup option.

5. Results and Analysis

Descriptive Statistics

The sample consists of 240 firms that are randomly chosen from incubators/accelerators of technology, services, and manufacturing sectors, as illustrated in table 1. The reason for such composition is the prevalence of the early-stage firms among them because of the typical structure of the entrepreneurial ecosystem.

Table 1: Startup profile characteristics (N = 240)

Variable	Category	Frequency	Percentage (%)
Industry Type	Technology	118	49.2
	Services	72	30.0
	Manufacturing	50	20.8
Startup Stage	Idea/pre-seed	58	24.2
	Seed Stage	112	46.7
	Growth Stage	70	29.1

This distribution suggests the dominance of technology-oriented organizations, which is further indicated by the predominance of seed stage firms, implying the significance of incubation and acceleration programs in the early stages of commercialization.

Reliability and Validity Analysis

Assessment of the measurement model indicates high levels of both reliability and convergent validity for constructs are shown in table 2 and fig. 2.

Table 2: Reliability and validity results

Construct	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Incubator Support Quality	0.86	0.89	0.62
Accelerator Program Intensity	0.88	0.91	0.66
Mentorship & Networking	0.84	0.88	0.60
Funding Access	0.87	0.90	0.64
Innovation Commercialization Capability	0.89	0.92	0.67
Market Readiness	0.90	0.93	0.69

Constructs are above the acceptable limits (α > 0.70, CR > 0.70, AVE > 0.50), ensuring reliability and convergent validity.

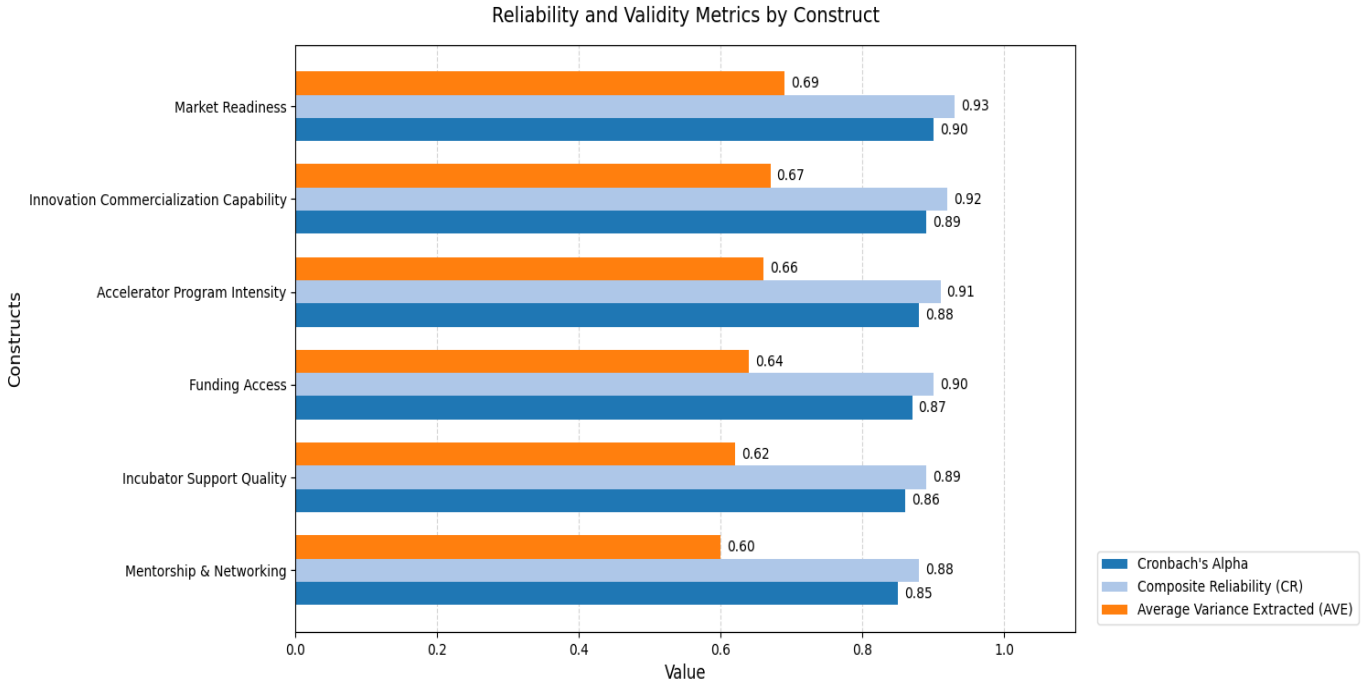

Fig. 2: Construct-wise reliability and validity assessment of study variables

Hypothesis Testing

Structural equation modeling was applied to test the hypotheses, as shown in table 3.

Table 3: Path coefficients and hypothesis testing results

Hypothesis	Relationship	β	t-value	p-value	Result
H1	Incubator Support → Market Readiness	0.42	6.85	<0.001	Supported
H2	Accelerator Intensity → Market Readiness	0.51	8.12	<0.001	Supported
H3	Mentorship & Networking → Commercialization Capability	0.47	7.34	<0.001	Supported
H4	Funding Access → Commercialization Capability	0.39	6.02	<0.001	Supported
H5	Commercialization Capability → Market Readiness	0.58	9.21	<0.001	Supported

All hypotheses show statistical significance at $p < 0.001$, proving that there are significant structural relationships between the variables.

Key Findings Overview

Table 4 shows that both incubators and accelerators significantly contribute to creating market readiness of startups, but the procedures differ.

Incubators exert a strong direct impact ($\beta = 0.51$) on market readiness due to their focus on scaling quickly, access to investors, and market entry. Although they are not so effective in terms of direct impact, incubators provide a basis for development and capability building.

Mentoring and networking ($\beta = 0.47$) among all support programs prove to be the most important for innovation commercialization capabilities.

Table 4: Comparative Impact summary

Support System	Direct Impact on Market Readiness	Indirect Impact via Capability	Overall Influence
Incubators	Moderate (0.42)	High (via capability building)	Strong
Accelerators	High (0.51)	Moderate	Very Strong
Mentorship & Networking	Indirect	Very High	Highest
Funding Access	Indirect	High	Strong

The findings indicate that rather than relying on just one factor that helps to facilitate success, there is a need for the three elements of incubation, acceleration, and mentorship/funding through the ecosystem. Commercialization capability as the mediator has been greatly validated to show how significant it is as the connection point between innovation and its marketability.

6. Discussion

It is evident from the findings of this research that there is a definite differentiation between the functions of incubators and accelerators in nurturing the growth of start-ups. Incubators provide valuable assistance in innovating early-stage start-ups through mentoring, structured guidance, and mentorship, which makes them very effective for the reduction of uncertainty and the improvement of innovation quality at the pre-seed and seed stages of start-ups. Accelerators, on the other hand, prove more effective in terms of faster scaling and market entry owing to their time-bound, intense programs.

Furthermore, the findings prove beyond doubt that it is the combination of mentoring, funding access, and ecosystem connectivity that fills the gap between innovations and the market. All these components make innovation commercialization capability an important mediator that links the support systems with the performance of the start-up. Overall, the findings seem to support the previous literature on entrepreneurship ecosystems and extend it further empirically with the concept of commercialization capability.

Theoretically, the research reinforces the Resource-Based View and Dynamic Capabilities approach through the finding that external systems provide support for the internal capabilities that make the business ready for the market. Practically, entrepreneurs can benefit from this knowledge in choosing suitable programs based on their maturity stage, and incubators and accelerators can adjust their mentoring and funding practices. Policymakers can able to improve innovation ecosystems by investing in suitable infrastructure, and investors can able to recognize scalable businesses by considering their commercialization capabilities.

7. Conclusion

The current research assessed the efficiency of the startup incubators and accelerators in addressing the gap between innovation and market readiness of the companies. The results clearly indicated that both types of organizations are playing an important role in the development process of startups. In particular, the startup

incubators are characterized by the medium effect on market readiness (β =0.42, p <0.001). This influence is realized through building up the innovation capacities at the early stages of business life, eliminating uncertainties, and offering initial support for entrepreneurs. The direct effect of the accelerators on market readiness was found to be greater ($\beta = 0.51$, $p < 0.001$). The research also verified the key mediation effect of innovation commercialization capability ($\beta = 0.58$, p <0.001). It means that start-ups have higher chances of success in the market if can efficiently commercialize innovations into business models. In relation to the support mechanisms, mentorship and networking proved to be the key factor that helps develop the ability to commercialize innovations. The second one is funding. Reinforcement of statistical analysis through reliability and validity testing showed that measurements of all constructs had high quality since Cronbach's alpha values varied between 0.84 and 0.90, whereas AVE values were higher than 0.60 for all variables. Thus, the model revealed its high explanatory power, thus proving the importance of entrepreneurial support systems for start-up performance improvement. Incubators create the basis for innovation, whereas accelerators help in achieving market transition and scalability, according to the findings of the study. Future research can be focused on analyzing the longitudinal data in order to evaluate the startup success over time. Moreover, cross-national analysis will allow determining the influence of the differences between regional ecosystems on the efficiency of incubation and acceleration processes. Finally, further investigation can be devoted to the usage of digital incubation platforms, AI mentorship, and sectoral accelerators.

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