INTERNATIONAL JOURNAL OF ENTREPRENEURSHIP AND BUSINESS INNOVATION

NAWALA

Volume 4, Number 2, 2025

Reconceptualizing Entrepreneurial Innovation Capability: Integrating Leadership, Technology, and Organizational Learning

Erlinda Wemona[1*]

[1] Sekolah Tinggi Ilmu Ekonomi Widya Wiwaha, Yogyakarta, Indonesia

Abstract

Article history:
Received: July 25, 2025
Revised: August 21, 2025
Accepted: October 17, 2025
Published: December 30, 2025

Keywords:
Digital Leadership, Entrepreneurial Innovation Capability, Organizational Learning, Technology Capability.

Identifier:
Nawala
Page: 130-142
https://nawala.io/index.php/ijebi

This article examines how entrepreneurial innovation capability is best conceptualized when leadership, technology, and organizational learning are treated as an integrated system in the context of accelerating digital change and heightened innovation pressure. The study's role is to reconcile fragmented definitions and measurements by synthesizing recent peer reviewed evidence into a clearer capability architecture. Using a systematic literature review of studies published from 2019 to 2024, the synthesis shows that entrepreneurial innovation capability is most consistently supported by three interlocking pathways: leadership that structures direction and experimentation governance, technology capabilities that enable faster recombination and scalable innovation, and organizational learning mechanisms that convert repeated trials into reusable routines. The discussion organizes findings around construct clarity issues, capability pathways and their mediators, and key boundary conditions such as readiness and environmental dynamism. Overall, the review finds that innovation advantage is less about isolated adoption or creativity and more about sustained orchestration of leadership, technology, and learning over time.

*Corresponding author:
(Erlinda Wemona)

1. Introduction

Entrepreneurial firms face a persistent challenge: how to repeatedly transform opportunities into novel products, services, and business models under uncertainty, while competitors can often imitate isolated innovations quickly. This challenge has renewed interest in entrepreneurial innovation capability as a higher-order capability that supports continuous innovation, not only single breakthroughs. Recent scholarship, however, still treats the construct unevenly, alternately framing it as an outcome (innovation performance), a bundle of routines (innovation capability dimensions), or a set of enabling conditions (leadership, learning, and digital resources). System-level reviews underscore that innovation capability research has expanded rapidly, yet measurements and conceptual boundaries remain fragmented across domains and levels of analysis (Moreira et al., 2024).

A growing stream argues that leadership is a primary microfoundation of innovation capability because leaders shape strategic intent, resource allocation, and the social conditions that govern experimentation and risk-taking. In digitally intensive contexts, leadership also carries a technology-facing role, translating digital possibilities into organizational priorities and coordinating platform or infrastructure standardization that makes scalable innovation feasible. Evidence indicates that digital leadership capabilities can influence innovation performance through platform digitization capability, suggesting that leadership does not merely motivate innovation but can actively build the digital architecture that enables it (Benitez et al., 2022). In parallel, research on the digital transformation of innovation and entrepreneurship emphasizes how digital technologies change opportunity

formation, value creation, and organizing logics, implying that entrepreneurial innovation capability increasingly depends on technology-enabled generativity and recombination rather than linear R&D alone (Nambisan et al., 2019).

Organizational learning research provides a complementary explanation: innovation capability is strengthened when firms systematically acquire, interpret, share, and apply knowledge across time. Empirical studies link organizational learning capability to organizational innovation, highlighting that learning routines can be a direct lever for innovation in resource-constrained settings (Haile & Tüzüner, 2022). Related work grounded in dynamic capability theory suggests that absorptive capacity and organizational learning capabilities help convert entrepreneurial orientation into stronger innovation capability, bridging external knowledge with internal renewal processes (Makhloufi et al., 2021). This learning-based view aligns with evidence that digital transformation in SMEs relies on sensing and learning mechanisms that redesign value creation, not simply adopting tools (Matarazzo et al., 2021), and with findings that digital capabilities can translate into stronger entrepreneurial performance (Kim & Jin, 2024).

Despite these advances, the literature rarely integrates leadership, technology, and organizational learning into a coherent reconceptualization of entrepreneurial innovation capability. Studies often explain pieces of the puzzle in isolation, for example digital leadership as an antecedent, learning as a mediator, or technology as a context, which limits theoretical accumulation and practical guidance. Addressing this gap, this article uses a systematic literature review of peer-reviewed studies published from 2019 to 2024 to synthesize how leadership logics, technology-related

capabilities, and organizational learning mechanisms jointly constitute entrepreneurial innovation capability. By integrating these streams, the review aims to refine construct boundaries, propose an integrative framework, and surface testable propositions and research directions for capability development in entrepreneurial settings.

2. Literature Review

Entrepreneurial innovation capability (EIC) is increasingly treated as a higher-order, integrative construct rather than a single functional competence. Recent reviews and conceptual work suggest that innovation capability aggregates interdependent micro-capabilities spanning strategy, technology and product development, market engagement, resource orchestration, and learning routines. A dynamic capability framing is common in this period, positioning innovation capability as rooted in sensing, seizing, and transforming processes that continuously renew an entrepreneurial venture's resource base and opportunity set (Nambisan et al., 2019). In this view, capability development is less about discrete innovation projects and more about building repeatable mechanisms that convert uncertainty into scalable value.

Within this broader capability stream, leadership is frequently theorized as the integrator that aligns exploration, exploitation, and learning across the organization. Entrepreneurial leadership research highlights how vision-setting, empowerment, and opportunity-focused influence can shape learning-oriented climates and innovation-supportive cultures, although evidence remains scattered across contexts

and operationalizations (Shiferaw et al., 2023). In parallel, digital-era leadership studies link leadership behaviors to the adoption and effective use of new technologies, emphasizing governance of experimentation, cross-boundary coordination, and readiness building. Empirical findings in SMEs indicate that leadership-enabled sensing and learning capabilities can trigger digital transformation and redesign value creation pathways (Matarazzo et al., 2021). This reinforces the argument that leadership contributes to innovation capability not only through direction and motivation, but also by structuring how the organization learns, collaborates, and reallocates resources under technological change.

Technology and organizational learning, meanwhile, appear in the literature as mutually reinforcing foundations of EIC. Research on digital transformation repeatedly shows that performance effects depend on complementary organizational resources and learning routines that support technology assimilation and recombination (Benitez et al., 2022). Studies also connect organizational learning capability to innovation outcomes and competitiveness, suggesting that learning routines, knowledge conversion, and absorptive processes function as proximal mechanisms for capability renewal (Makhloufi et al., 2021; Haile & Tüzüner, 2022). A recent bibliometric synthesis further indicates growing scholarly convergence around organizational learning, innovation performance, and ambidexterity, while also signaling fragmentation in constructs and measurement choices (Hael et al., 2024). Taken together, this body of work motivates a reconceptualization of entrepreneurial innovation capability as an integrated system in which leadership enables direction and coordination, technology provides new affordances for

recombination, and organizational learning supplies the renewal logic that sustains innovation over time.

3. Method

This study employed a systematic literature review to reconceptualize entrepreneurial innovation capability by integrating leadership, technology, and organizational learning. A review protocol was established to define the scope, keywords, inclusion and exclusion criteria, and the data extraction plan. Searches were conducted in major scholarly databases (for example Scopus, Web of Science, and Google Scholar) using keyword combinations related to entrepreneurial innovation capability, innovation capability, entrepreneurial leadership, digital leadership, digital transformation, technology capability, organizational learning, absorptive capacity, dynamic capabilities, and SMEs or entrepreneurial firms. The search was limited to peer reviewed journal articles published between 2019 and 2024 and written in English.

All records were exported, de duplicated, and screened in two stages: title and abstract screening followed by full text eligibility assessment. Studies were excluded if they were not peer reviewed, outside the year range, not focused on entrepreneurial or SME contexts, or did not address at least one of the three integration pillars (leadership, technology, organizational learning) in relation to innovation capability. Methodological quality was assessed using a structured checklist (clarity of constructs, transparency of methods, appropriateness of evidence, and relevance to the review aim). Data were extracted into a standardized matrix capturing study

context, definitions and measures of innovation capability, leadership constructs, technology related mechanisms, learning mechanisms, and reported relationships among variables. The synthesis used narrative thematic analysis to derive an integrative conceptual model and to identify recurring pathways, boundary conditions, and gaps that inform future empirical research.

4. Results and Discussion

Across the reviewed studies, entrepreneurial innovation capability (EIC) is most convincingly portrayed as a higher-order capability system that enables ventures to repeatedly generate novelty, select promising options, and scale them under uncertainty. A major result of the synthesis is that the field still struggles with construct clarity. Many measures label EIC as a "capability" while operationalizing it as innovation outputs, or they bundle antecedents (such as leadership support) together with outcomes (such as innovation performance). This blending weakens comparability and likely overstates relationships in some empirical models because predictors and criteria partially overlap (Saunila, 2020; Moreira et al., 2024). Reconceptualizing EIC as a system of mechanisms, rather than a proxy for performance, helps separate what EIC is from what it produces.

A second pattern is that leadership functions as a core integrator of EIC by shaping direction, coordination, and the rules of experimentation. The evidence suggests that leadership contributions become most visible when leaders do more than encourage creativity, instead they design decision routines, allocate attention to opportunity portfolios, and build coordination structures that allow learning to travel

across projects. Digital-era leadership studies reinforce this view by showing that leadership capability can influence innovation performance through platform digitization capability, implying a pathway in which leaders convert strategic intent into enabling digital architecture and governance (Benitez et al., 2022). In parallel, work on digital transformation of entrepreneurship emphasizes that technology changes how opportunities are formed and exploited, pushing entrepreneurial organizing toward recombination and faster experimentation cycles (Nambisan et al., 2019). Taken together, leadership is best interpreted as the mechanism that aligns entrepreneurial search with disciplined capability formation.

Third, technology strengthens EIC primarily by increasing the speed and modularity of recombination, but its effects depend on complementary capability shifts. Studies repeatedly indicate that technology adoption alone is an unreliable predictor of innovation. More robust findings appear when digital transformation is linked to intermediate mechanisms such as business model innovation, process redesign, and new value creation logics. Evidence from innovative SMEs shows that digital transformation improves performance through business model innovation, underscoring that EIC should explicitly incorporate technology-enabled redesign of value creation and capture as part of its core content (Merín-Rodrigáñez et al., 2024). This aligns with broader SME findings that digital capabilities are associated with stronger entrepreneurial performance, suggesting that technology matters most when it is internalized as capability rather than treated as an external toolset (Kim & Jin, 2024).

Fourth, organizational learning emerges as the renewal engine that makes EIC durable. Across contexts, learning capability is linked to innovation outcomes, implying that firms innovate more consistently when they can acquire knowledge, interpret feedback, share insights, and update routines over time (Haile & Tüzüner, 2022). Mechanism-oriented studies also show that absorptive capability and organizational learning capabilities can transmit entrepreneurial orientation into stronger innovation capability, highlighting how external signals and opportunities become internalized into repeatable innovation routines (Makhloufi et al., 2021). In this integrated reading, leadership sets learning priorities and protects experimentation, technology expands the space of possible recombinations, and learning converts experiments into codified routines and reusable know-how.

When these strands are combined, a revised explanation becomes clearer: EIC operates through three interlocking pathways. The first is a directional pathway in which leadership structures attention, governance, and resource allocation. The second is an enablement pathway in which technology architectures increase interoperability, data visibility, and modular recombination. The third is a renewal pathway in which organizational learning and absorptive processes convert experience into improved routines and faster opportunity execution. This integrated model also helps interpret boundary conditions found in the review. Effects vary with managerial readiness, innovation intensity, and measurement maturity, particularly when studies extend EIC toward sustainability-oriented outcomes. For example, evidence from community enterprises indicates that innovation capability can function as a mechanism connecting entrepreneurial capability to sustainable

performance, suggesting that EIC can translate potential into measurable outcomes when the organization has adequate learning routines and implementation discipline (Somwethee et al., 2023). Similarly, research in SME settings indicates that digital transformation and dynamic capabilities can jointly strengthen financial performance, implying that EIC should be examined as a capability configuration rather than a single-variable driver (Valdez-Juárez et al., 2024). Overall, the revised synthesis supports reconceptualizing EIC as an orchestrated leadership-technology-learning system, and it clarifies why some entrepreneurial firms convert digital change into sustained innovation while others remain stuck at adoption.

5. Conclusion

In conclusion, this review supports reconceptualizing entrepreneurial innovation capability (EIC) as an integrated system rather than a single attribute or a proxy for innovation performance. The most defensible synthesis is that EIC is built through the alignment of leadership-driven direction and governance, technology-enabled recombination and scalability, and organizational learning that converts experiments into reusable routines. Framing EIC this way helps clarify why entrepreneurial firms can show similar levels of "innovation activity" but achieve very different levels of sustained innovation, because what matters is how consistently they can orchestrate these mechanisms over time.

At the same time, the validity of conclusions is constrained by recurring limitations in the underlying studies. Many findings are based on cross-sectional designs, self-reported measures, and single-informant surveys, which raises concerns

about common method bias and reverse causality, for example whether stronger performance leads to more investment in leadership development or digital tools rather than the other way around. Conceptual inconsistency is another major weakness: studies often define EIC differently and frequently mix inputs, processes, and outcomes within the same measurement models, which makes effect sizes difficult to interpret and can exaggerate relationships through construct overlap. These issues invite a careful question for readers: to what extent might the reported mechanisms reflect measurement design and context-specific conditions rather than stable causal pathways?

Future research can strengthen the field by using clearer construct boundaries and more rigorous designs that track capability development over time. Longitudinal studies, mixed-method designs, and quasi-experimental approaches would improve causal inference and reveal how leadership, technology, and learning interact across growth stages and turbulence levels. Another priority is measurement harmonization, including validated EIC scales that separate antecedents, mechanisms, and outcomes, and that can be applied consistently across entrepreneurial settings. Finally, research should test boundary conditions more explicitly, including industry dynamism, digital maturity, resource constraints, and ecosystem embeddedness, to explain when EIC configurations are most likely to produce durable innovation advantages.

References

Benitez, J., Arenas, A., Castillo, A., & Esteves, J. (2022). Impact of digital leadership capability on innovation performance: The role of platform digitization capability. *Information & Management, 59*(2), 103590.

Hael, M., Belhaj, F. A., & Zhang, H. (2024). Organizational learning and innovation: A bibliometric analysis and future research agenda. *Heliyon, 10*(11), e31812.

Haile, E. A., & Tüzüner, V. L. (2022). Organizational learning capability and its impact on organizational innovation. *Asia Pacific Journal of Innovation and Entrepreneurship, 16*(1), 69-85.

Kim, J., & Jin, W. (2024). Impact of digital capabilities on entrepreneurial performance in SMEs. *Journal of Innovation & Knowledge, 9*(4), 100609.

Makhloufi, L., Laghouag, A. A., Ali Sahli, A., & Belaid, F. (2021). Impact of entrepreneurial orientation on innovation capability: The mediating role of absorptive capability and organizational learning capabilities. *Sustainability, 13*(10), 5399.

Matarazzo, M., Penco, L., Profumo, G., & Quaglia, R. (2021). Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective. *Journal of Business Research, 123*, 642-656.

Merín-Rodrigáñez, J., Dasí, À., & Alegre, J. (2024). Digital transformation and firm performance in innovative SMEs: The mediating role of business model innovation. *Technovation, 134*, 103027.

Moreira, A., Navaia, E., & Ribau, C. (2024). Innovation capabilities and their dimensions: A systematic literature review. *International Journal of Innovation Studies, 8*(3), 313-333.

Nambisan, S., Wright, M., & Feldman, M. (2019). The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. *Research Policy, 48*(8), 103773.

Saunila, M. (2020). Innovation capability in SMEs: A systematic review of the literature. *Journal of Innovation & Knowledge, 5*(4), 260-265.

Shiferaw, R. M., Birbirsa, Z. A., & Werke, S. Z. (2023). Entrepreneurial leadership, learning organization and organizational culture relationship: A systematic literature review. *Journal of Innovation and Entrepreneurship, 12*, 38.

Somwethee, P., Aujirapongpan, S., & Ru-Zhue, J. (2023). The influence of entrepreneurial capability and innovation capability on sustainable organization performance: Evidence of community enterprise in Thailand. *Journal of Open Innovation: Technology, Market, and Complexity, 9*(2), 100082.

Valdez-Juárez, L. E., Ramos-Escobar, E. A., Hernández-Ponce, O. E., & Ruiz-Zamora, J. A. (2024). Digital transformation and innovation, dynamic capabilities to strengthen the financial performance of Mexican SMEs: A sustainable approach. *Cogent Business & Management, 11*(1), 2318635.