

Charting the Future of Entrepreneurial Orientation: A Systematic Review and Science Mapping of Generative AI's Emerging Impact

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Abstract: This working paper aims to provide a comprehensive overview of how Generative Artificial Intelligence (GenAI) is shaping the evolution of Entrepreneurial Orientation (EO), understood as a strategic construct including innovativeness, proactiveness, and risk-taking. As GenAI tools become increasingly accessible and applied, their effects on entrepreneurial behavior and decisions are gaining attention. However, there is still not a clearly defined picture of the conceptual and empirical relationship between these two domains. To address this gap, a systematic review of literature has been conducted using PRISMA guidelines, across the databases of Scopus and Web of Science, collecting peer-reviewed articles between 2019 to 2025. Documents were identified, screened and evaluated, following criteria such as theoretical consistency and methodological relevance. In parallel, a science mapping approach was used, including co-occurrence of keywords, co-citation networks, and thematic clusters, with the goal to visualize the structure and growth of research. The results shows five main clusters: first, GenAI contributes to better performance by aligning well with entrepreneurial tasks; second, it enhances innovation and decision-making under uncertainty; third, it supports both generative and acquisitive learning in entrepreneurial contexts; fourth, it enables sustainability-oriented entrepreneurship by affecting how entrepreneurs perceive desirability and feasibility; and finally, GenAI plays a mediating role in product customization and market performance. Yet, there are challenges still to overcome ethical concerns, data bias and the lack of digital competencies among entrepreneurs. In conclusion, the paper recommends more studies that can go beyond correlation, including longitudinal designs or experimental methods, to better understand causal mechanisms. Also, some attention should be paid to the role of GenAI in entrepreneurial education, since many universities are still catching up with these fast technological transformations. Why is your paper of interest to the conference participants? Use this space to persuade the reviewers why they should select this abstract for the conference: This paper offers timely insight into how GenAI is reshaping entrepreneurial behavior, strategy, and education. It bridges technology and entrepreneurship through rigorous analysis and visualization, making it highly relevant for scholars, educators, and practitioners seeking to understand emerging trends and future capabilities in entrepreneurial ecosystems.

Keywords: Entrepreneurial Orientation, Generative Artificial Intelligence, Strategic Decision-Making, Systematic Review and Entrepreneurial Ecosystems

1. Introduction

The rapid development of artificial intelligence (AI) has transformed how firms compete, innovate, and create value across industries, opening unprecedented opportunities for entrepreneurship (Zulfiqar et al., 2025). Among its most disruptive advancements, generative AI (GenAI) produces ideas, content, and solutions that enhance productivity while redefining strategic choices and market positioning (Dabić et al., 2023; Rajaram & Tinguely, 2024). For entrepreneurs, GenAI represents both opportunities and challenges: it fosters creativity, reduces uncertainty, and supports decision-making, but also raises concerns about ethics, governance, and digital skills (Wach et al., 2023; Wirth et al., 2025). Entrepreneurial orientation (EO), defined by innovativeness, proactiveness, and risk-taking, provides a useful lens for understanding these dynamics (Davidsson & Sufyan, 2023). GenAI enhances EO by enabling innovative solutions (Xu et al., 2024), supporting proactivity with predictive analytics (Ahmić & Šahović, 2025), and facilitating risk-taking by reducing uncertainty (López-Solís et al., 2025). Yet, the literature remains fragmented, requiring systematic synthesis (Dwivedi, 2025).

2. Methodology

This study conducted a systematic literature review consistent with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency and replicability (Moher et al., 2009). Two comprehensive databases, **Scopus and Web of Science**, were selected for their wide coverage of peer-reviewed journals in business, technology, and social sciences (Mongeon & Paul-Hus, 2016). The search was limited to English-language articles published between **2019 and 2025**, reflecting the rise of generative AI (GenAI) and its implications for entrepreneurial orientation (EO). A Boolean query combined four domains: (“generative artificial intelligence” OR “artificial intelligence”) AND (“entrepreneurial orientation” OR “entrepreneurship” OR “entrepreneur” OR “business strategy”) AND (“innovation” OR “creativity” OR “startups”) AND (“decision

making” OR “risk taking” OR “proactiveness” OR “autonomy”). The search yielded **120 documents**, of which 37 met the inclusion criteria after screening and full-text evaluation.

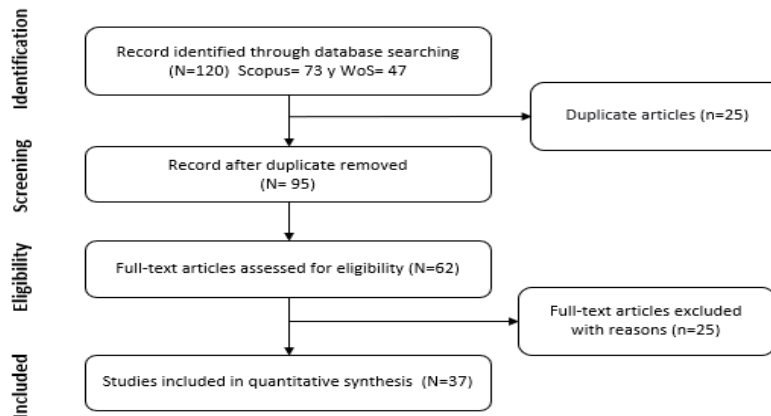


Figure 1: PRISMA Flow Diagram

3. Findings

The synthesis of the reviewed literature highlights diverse ways in which GenAI influences Entrepreneurial Orientation (EO). Key findings reveal its impact on innovation, adoption in startups, education, sustainability, and ethical considerations. The main themes, insights, and representative references are summarized **as shown in Table 1**, providing a structured overview of this evolving research domain.

Table 1: Key Findings on the Relationship Between Generative AI and Entrepreneurial Orientation

Theme	Key Insights	References
Increased Publication and Research Focus	Significant surge in publications on AI and entrepreneurship, with annual growth rate above 32%, reflecting rising interest and recognition of AI's role in entrepreneurial contexts.	Alqahtani & Alqahtani (2024)
Impact on Innovation and Business Models	GenAI identified as an engine of industrial innovation, transforming processes, models, and value propositions. Examples include operational, product, and business model innovation, with expected ROI of 10% by 2025.	Xue & Jiang (2025); Sedkaoui & Benaichouba (2024); Marshall et al. (2024)
Adoption and Utilization in Startups	Startups and SMEs leverage GenAI for competitive advantage, digital transformation, and new business models. Adoption influenced by social influence, domain experience, technology familiarity, and system quality.	Gupta (2024)
Ethical and Responsible AI Development	Emphasis on ethical frameworks to address bias, privacy, and accountability concerns, ensuring responsible and equitable adoption of GenAI.	Sedkaoui & Benaichouba (2024);
Sustainability and Entrepreneurial Intentions	GenAI enhances sustainability-oriented entrepreneurial intentions via psychological mechanisms.	Duong (2025)
Emerging Themes and Frameworks	GAIN Framework for adoption, education, innovation, and performance; GAI&ABC Model for sustainable business model innovation through exploratory and exploitative learning.	Dwivedi (2025); Wang & Zhang (2025)
Challenges and Opportunities	Digital divide particularly affects African American entrepreneurs; need for partnerships and training. Differences across countries highlight need for tailored digital entrepreneurship strategies.	George & Mattathil (2025); Radović-Marković (2025)

The findings highlight that GenAI significantly shapes the dimensions of Entrepreneurial Orientation, particularly risk-taking, innovativeness, and proactivity. However, a critical examination suggests that much of the existing literature emphasizes technological affordances while underexploring contextual and human limitations. For instance, while GenAI reduces uncertainty and supports calculated risk-taking (López-Solís et al., 2025), this benefit often assumes access to high-quality datasets and adequate interpretive capabilities, which are not

uniformly available across entrepreneurial ecosystems. Similarly, GenAI enhances innovativeness through idea generation and organizational learning (Xu et al., 2024; Wang & Zhang, 2025), yet these outcomes depend heavily on entrepreneurs' absorptive capacity and ethical safeguards to prevent misuse (Dwivedi, 2025).

Proactivity is reinforced through predictive analytics and real-time insights, allowing entrepreneurs to anticipate shifts and act decisively (Ahmić & Šahović, 2025). Nonetheless, systemic barriers such as data biases (Wirth et al., 2025), limited contextual understanding (Wach et al., 2023), and digital illiteracy (Murungu, 2025) constrain inclusivity, creating risks of uneven benefits. This paradox indicates that GenAI may amplify advantages for digitally advanced firms while marginalizing others.

The discussion could be expanded with practical implications for entrepreneurship education and development. Curricula should integrate not only AI competencies but also training in risk evaluation, data literacy, and ethical reasoning. For policymakers, fostering equitable access to AI infrastructure, creating transparent regulatory frameworks, and supporting capacity-building programs are essential to ensure that GenAI-driven EO outcomes are sustainable, responsible, and broadly accessible.

Ethics Declaration

This research did not involve human participants, animals, or sensitive data requiring institutional ethical clearance. The study is based exclusively on a systematic review and bibliometric analysis of previously published academic sources. All materials used have been properly cited, and no ethical approval was required for this type of research.

AI Declaration

The authors acknowledge the use of artificial intelligence tools exclusively to refine and draft English phrases in this manuscript. All conceptual development, analysis, and conclusions are entirely the responsibility of the authors, and AI-generated suggestions were critically reviewed, adapted, and validated to ensure originality, accuracy, and academic rigor.

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