REVISTA INVECOM
ISSN en línea: 2739-0063

Entrepreneurship in the 21st century: An integrative review of contemporary challenges and emerging perspectives

Emprendimiento en el siglo XXI: una revisión integrativa sobre desafíos contemporáneos y perspectivas emergentes

Received: 13/06/2025 - **Accepted:** 08/11/2025

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Abstract

Entrepreneurship has become a key driver of economic and social development. However, current challenges such as the climate crisis, technological disruption, and structural inequalities demand a thorough review of its theoretical foundations and its role in global sustainability. This study presents a systematic, integrative review of recent literature (2016–2025) to identify the determinants, challenges, and emerging trends of contemporary entrepreneurship. Forty-six peer-reviewed articles were analyzed, obtained from the Scopus, Web of Science, ScienceDirect, and SciELO databases. The findings are grouped into five main dimensions: human capital and entrepreneurial skills; networks and social capital; ecosystems and institutions; digital transformation and artificial intelligence; and sustainability and social impact. In conclusion, 21st-century entrepreneurship requires an interdisciplinary, inclusive, and ethical approach, capable of integrating technological innovation, social resilience, and environmental sustainability to address current and future challenges.

Keywords: social capital, entrepreneurship, innovation, artificial intelligence, integrative review, sustainability.

Resumen

El emprendimiento se ha consolidado como un motor clave para el desarrollo económico y social. Sin embargo, desafíos actuales como la crisis climática, la disrupción tecnológica y las desigualdades estructurales demandan una revisión profunda de sus fundamentos teóricos y su rol en la sostenibilidad global. Este estudio realiza una revisión integrativa sistematizada de la literatura reciente (2016–2025) con el objetivo de identificar los determinantes, desafíos y tendencias emergentes del emprendimiento contemporáneo. Se analizaron 46 artículos revisados por pares, obtenidos de las bases de datos Scopus, Web of Science, ScienceDirect y

SciELO. Los hallazgos se agrupan en cinco dimensiones principales: capital humano y competencias emprendedoras; redes y capital social; ecosistemas e instituciones; transformación digital e inteligencia artificial; y sostenibilidad e impacto social. En conclusión, el emprendimiento del siglo XXI demanda un enfoque interdisciplinario, inclusivo y ético, capaz de integrar innovación tecnológica, resiliencia social y sostenibilidad ambiental para enfrentar los retos actuales y futuros.

Palabras clave: capital social, emprendimiento, innovación, inteligencia artificial, revisión integrativa, sostenibilidad.

Introduction

Entrepreneurship is widely recognized as a driving force behind economic growth, innovation, and social transformation. But the current landscape, defined by global crises such as climate change, political and economic instability, rapid technological disruption, and deepening social inequities, calls for moving beyond traditional frameworks centered narrowly on the individual entrepreneur and market mechanisms. Today, entrepreneurship is better understood as a complex, multidimensional process that weaves together human, institutional, technological, and social factors. Concepts like resilience, creativity, adaptability, and continuous learning have taken center stage, enabling entrepreneurs to navigate uncertainty and seize emerging opportunities (Gunawan, 2024).

Within higher education, active learning methodologies and project-based approaches have proven effective in building these essential entrepreneurial competencies, offering students immersive, collaborative experiences that bridge theory and practice (Crespí et al., 2022). Meanwhile, social and intellectual capital, understood as networks of relationships, mutual trust, and dynamic knowledge Exchange, has emerged as a critical resource for driving innovation, particularly in resource-constrained environments marked by high structural barriers (Klarin & Suseno, 2022). In the Global South, social entrepreneurship has gained traction as a meaningful pathway to sustainable development and economic justice, demonstrating its capacity to address local challenges through creative, participatory approaches (Baker & Weerakoon, 2024).

Given this multifaceted reality, the core purpose of this study is to conduct a systematic integrative review of the scientific evidence published over the past decade on entrepreneurship. The review aims to identify the principal contemporary challenges and emerging perspectives that define entrepreneurship as a complex, multidimensional, and dynamic phenomenon. This approach enabled the construction of a clear thematic framework and a defined temporal scope, guiding the search and selection of the most relevant articles. Specifically, two main objectives were established: (a) to identify the foundational dimensions that structure the synthesis of findings and offer an integrated framework for understanding the multiple factors shaping entrepreneurship today, and (b) to analyze how these dimensions reflect current challenges and emerging trends in the recent literature.

Methodology

This study constitutes an integrative literature review, conducted in accordance with the PRISMA 2020 guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). This approach enabled a systematic identification, appraisal, and synthesis of theoretical and empirical evidence on 21st-century entrepreneurship, incorporating contributions from management, innovation, and economics.

An integrative review design was selected for its capacity to bring together and contrast findings from quantitative, qualitative, and mixed-methods studies. This choice supports a broader, more nuanced understanding of contemporary entrepreneurship, its challenges, and its emerging trajectories.

The methodological procedure unfolded in five sequential phases: (i) defining the research problem and setting the review objectives; (ii) establishing inclusion and exclusion criteria; (iii) designing and executing the search strategy; (iv) critically appraising the quality of selected studies; and (v) conducting an integrative analysis and synthesis of the results. The review was guided by the following central question:

What are the main contemporary challenges and emerging perspectives in 21st-century entrepreneurship, as reflected in the scientific literature of the last decade? This question delimited both the thematic focus and the temporal scope, shaping the search strategy and the selection of the most pertinent articles.

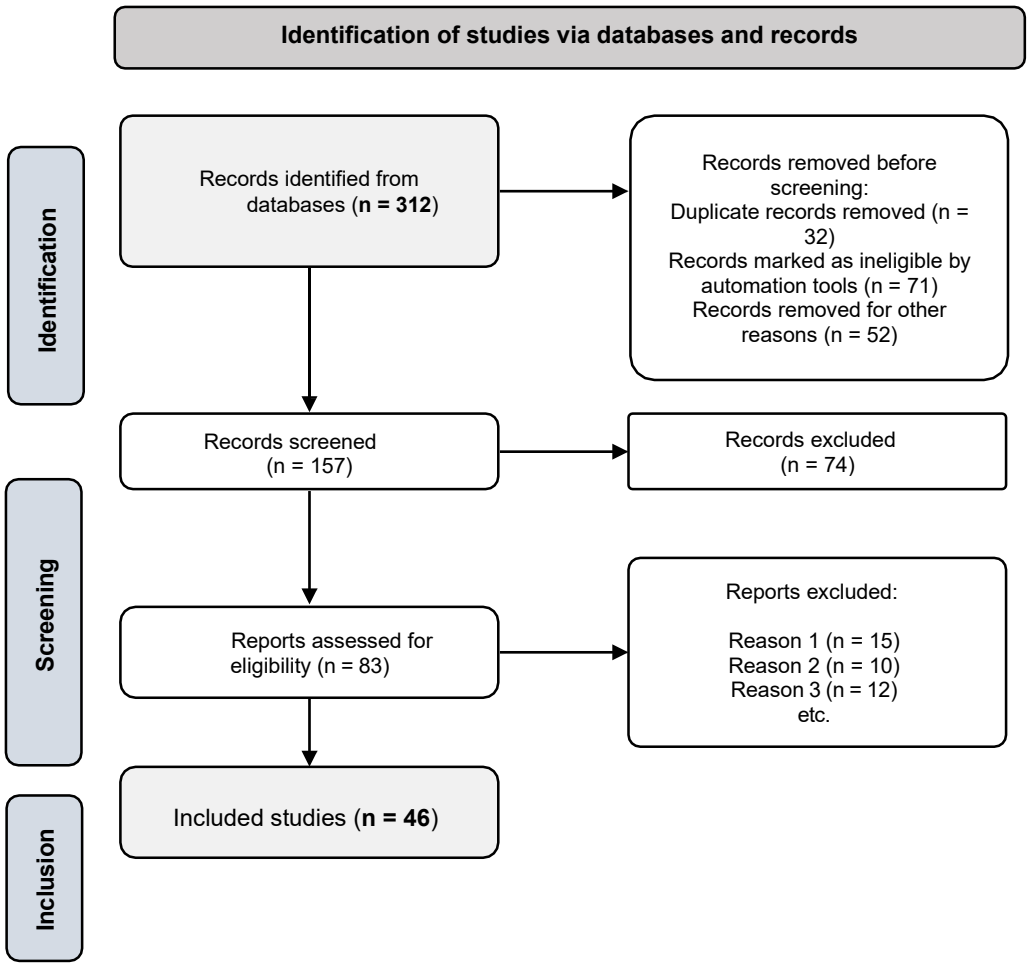
The literature search was carried out across Scopus, Web of Science, SciELO, Redalyc, Dialnet, and Google Scholar, databases chosen for their relevance and coverage in the social sciences, business management, and innovation fields. To refine the results, combinations of keywords in Spanish and English were used, adapted to the Social Sciences Descriptors (DeCS) and the APA Thesaurus, with Boolean operators applied to sharpen the search. The general search string was: *("entrepreneurship" OR "entrepreneurial activity" OR "business innovation") AND ("21st century" OR "digital era" OR "emerging trends" OR "contemporary challenges") AND ("innovation" OR "sustainability" OR "social entrepreneurship")*. Filters were applied for publication year (2016–2025), language (Spanish and English), and full-text availability. Retrieved records were exported to Mendeley for organization and duplicate removal.

Regarding inclusion and exclusion criteria, the review selected peer-reviewed articles published between 2016 and 2025, in Spanish or English, available in full text, and addressing entrepreneurship from contemporary perspectives related to digitalization, sustainability, innovation, leadership, or public policy. Preference was given to studies with a global or regional scope, with particular attention to contributions from Latin America, Europe, and Asia, given their relevance to current entrepreneurial ecosystems. Works not formally published, book reviews, conference abstracts, editorials, and non-peer-reviewed documents were excluded. Also excluded were studies focused exclusively on traditional or historical entrepreneurship, duplicates, those lacking clear methodology or verifiable results, articles in languages other than Spanish or English, and those without a direct connection to management, innovation, or business development.

The selection process followed the PRISMA 2020 stages of identification, screening, eligibility, and inclusion.

Figure 1

PRISMA flow diagram



To assess the methodological quality of the included studies, the Joanna Briggs Institute (JBI) guidelines and the CASP (Critical Appraisal Skills Programme) checklists were applied, adapted to each study's research design. Articles were rated as high, moderate, or low quality based on clarity of objectives, methodological coherence, internal validity, and consistency of results.

Ultimately, as shown in Figure 1, 46 articles were analyzed. Relevant data were extracted into a matrix developed in Microsoft Excel, capturing author, year, country, objective, study type, methodology, key findings, and conclusions. The information was then processed using thematic and comparative analysis, which allowed the identification of common patterns, research gaps, and emerging trends.

It is important to note that the risk-of-bias assessment was tailored to the type of study included in this systematic review. For quantitative empirical studies, criteria adapted from the JBI/NOS framework were applied, while systematic reviews, meta-analyses, and theoretical reviews were assessed using an adapted version of AMSTAR 2. For quantitative empirical studies, appropriate analytical procedures and the use of representative samples from European, Asian, and Latin American countries were identified. Although some of these studies were conducted within highly specific institutional contexts, their quality was sufficient to contribute meaningfully to the overall synthesis. Overall, no studies with a high risk of bias were identified, indicating that the evidence base is methodologically sound and appropriate for addressing the research question.

Synthesis of results

Five principal dimensions were identified, providing an integrated framework for understanding the multiple factors shaping contemporary entrepreneurship.

1. Human capital and entrepreneurial competencies

In recent years, human capital and entrepreneurial competencies have been reaffirmed as central to performance in digital and highly uncertain environments. Human capital is now conceived as a dynamic set of knowledge, skills, and attitudes that facilitate adaptation and opportunity recognition (Marvel et al., 2016). Reviews indicate that human capital knowledge directly conditions entrepreneurial performance (Newman et al., 2019). In particular, the value of specific human capital, linked to sectoral experience and practical skills, is highlighted over general human capital associated with formal education (Caliendo et al., 2023). Entrepreneurial competencies, meanwhile, represent the behavioral dimension of this capital; self-efficacy, in particular, explains persistence, risk-taking, and innovation, and is associated with performance and business survival (Newman et al., 2019; Caliendo et al., 2023). Entrepreneurship education that emphasizes competency development through experiential learning, mentoring, and real-world projects has been shown to produce lasting effects on entrepreneurial intention and behavior (Martínez-Gregorio et al., 2021). Moreover, digital competencies —technological literacy, data management, and effective use of digital tools— are now indispensable for competitiveness and adaptation amid ongoing disruptions (Paul et al., 2023; Shatila et al., 2025). Finally, transversal competencies such as sustainability awareness, ethical judgment, uncertainty management, and resource mobilization are underscored as essential for the functioning of innovative ecosystems (Bernadó & Bratzke, 2024).

2. Networks, social and intellectual capital

Over the past decade, social capital, networks, and intellectual capital have come to the fore as critical factors in venture creation, consolidation, and sustainability. Social capital, understood as the relationships that facilitate access to resources, information, and legitimacy, is recognized as one of the strongest predictors of entrepreneurial success (Fernandes & Ferreira, 2022). Innovative literacy has been identified as a significant factor influencing intellectual capital, enhancing its value (Yuksel, 2024). These networks are examined across three distinct dimensions: structural —referring to the density and diversity of ties; relational —centered on trust and reciprocity; and cognitive —encompassing shared meanings and goals (Xie & Wang, 2021). Entrepreneurs with broad, heterogeneous networks access strategic information and capital more effectively, strengthening innovation and survival prospects (Tran et al., 2024). Digitalization has given rise to new forms of social capital based on virtual interaction, online reputation, and platform-based collaboration, expanding the reach of traditional networks while also introducing new governance and trust challenges (Bejjani et al., 2023).

In this context, social signals and digital reputation have become critical in mechanisms such as crowdfunding and investor attraction (Zhang et al., 2025). Intellectual capital, encompassing human, structural, and relational dimensions, is closely tied to innovation and growth, particularly through relational capital with customers, suppliers, and partners (Ali et al., 2021), as well as structural capital that organizes knowledge and processes (Musman et al., 2025). Recent literature emphasizes that competitive advantage arises from the interplay between social and intellectual capital and the capacity to mobilize these resources within ecosystems,

provided that appropriate institutional coordination and governance mechanisms are in place (Zacca, 2025).

3. Ecosystems and institutions

The analysis of entrepreneurial ecosystems and the role of institutions has become central to explaining business creation and sustainability. Entrepreneurial ecosystems are understood as networks of actors and infrastructures that, through norms and information flows, facilitate access to resources, knowledge, and legitimacy (Fernandes & Ferreira, 2022). Crucially, institutional quality directly affects ecosystem efficiency, as policies, regulations, and cognitive frameworks shape both venture emergence and innovation (Lopez et al., 2025). From an institutional theory perspective, the regulatory pillar alone is insufficient without complementary normative and cultural supports that legitimize risk-taking and innovation (Steinhauser et al., 2022); formal and informal institutions must thus function in tandem. In this regard, universities, incubators, and accelerators play an essential role in articulating networks and facilitating knowledge transfer, spurring the creation of innovative startups (Masucci et al., 2024). Seed accelerators, in particular, have been shown to accelerate growth and improve survival rates by providing structured support and investment access (Hochberg, 2016). Digitalization has also given rise to digital entrepreneurial ecosystems, where online reputation, platform-based collaboration, and technological orchestration become strategic assets, albeit accompanied by new governance and intellectual property challenges (Bejjani et al., 2023). In this context, the combination of institutional quality and digital social signals enhances success in crowdfunding and early-stage financing (Xu et al., 2025). Finally, the shift toward sustainable entrepreneurship ecosystems highlights how public policies, green incentives, and environmental standards channel innovation toward responsible models, provided collaborative governance exists among state, academia, and industry (Audretsch et al., 2024).

4. Digital transformation and artificial intelligence

In recent years, digital transformation and artificial intelligence (AI) have solidified their position as the most significant drivers of change in contemporary entrepreneurship, reshaping business models, organizational structures, and the competencies required to compete globally (Paul et al., 2023). Digital transformation has spawned digital entrepreneurial ecosystems where technologies, data, and platforms integrate new forms of interaction among entrepreneurs, customers, investors, and suppliers, facilitating open innovation and collaborative value creation (Bejjani et al., 2023). Yet this dynamic also fosters dependence on dominant platforms and reproduces power asymmetries (Cutolo & Kenney, 2021). In this landscape, artificial intelligence, particularly generative AI, functions as a cognitive infrastructure that optimizes opportunity detection, accelerates innovation, and improves business decision-making (Uriarte et al., 2025). Generative AI shortens the early stages of entrepreneurship, including prototyping, value proposition formulation, and investor communication, by facilitating content creation and lowering entry barriers (Li et al., 2025). Ethical governance is therefore essential to prevent technological dependency and preserve human creativity. Integrating AI into entrepreneurship programs strengthens creativity, problem-solving, and adaptability, with AI acting as a cognitive assistant that supports personalized learning (Park et al., 2025). Nevertheless, the digital divide continues to constrain equitable access to these opportunities, particularly in developing countries (Yu & Sekiguchi, 2024).

5. Sustainability and social impact

In 21st-century entrepreneurship, sustainability and social impact have become foundational pillars, moving beyond a purely profit-driven logic to integrate economic, environmental, and social objectives, spurred by the Sustainable Development Goals (SDGs) and increasingly conscious consumers (Muñoz & Cohen, 2018; Gast et al., 2017; Schaltegger et al., 2015). Sustainable entrepreneurship is understood as the simultaneous creation of economic, social, and ecological value (Shepherd & Patzelt, 2017), though challenges remain in operationalizing its definition and establishing standardized metrics for impact measurement (Fichter & Tiemann, 2020; Saebi et al., 2018). A key challenge is the scalability of hybrid models without mission drift, which requires supportive institutional frameworks and inclusive innovation policies, particularly in Latin America (Zahra et al., 2014). Peripheral learning broadens perspectives, generates innovation, and creates value, fostering economic and community development as well as entrepreneurial learning; this requires leadership and skills that bridge center-periphery communication, facilitating interaction and entrepreneurship. Evidence also shows that initiatives such as B Corps and green startups can combine sustainability, resilience, and competitiveness (Wright & Nyberg, 2015). Digitalization acts as a catalyst, enabling traceability, transparency, and impact measurement through technologies such as AI, blockchain, and IoT, thereby strengthening stakeholder trust and fostering convergence between technological innovation and social responsibility (Seelos & Mair, 2017). Current perspectives point toward impact-oriented ecosystems where state, universities, businesses, and communities promote a regenerative economy, provided regulatory frameworks incentivize responsible innovation and

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entrepreneurial education incorporates ethical and environmental dimensions (Hockerts & Wüstenhagen, 2010; Biberhofer & Rammel, 2017). Consequently, the main challenges include reaching conceptual consensus, advancing impact measurement, scaling hybrid models, and aligning them with the SDGs. Despite these difficulties, emerging trends suggest that 21st-century entrepreneurship will become increasingly inclusive, ethical, and oriented toward the common good.

Discussion

The analysis reveals that 21st-century entrepreneurship is moving toward hybrid, collaborative models with high technological intensity. This entails significant transformations in entrepreneurial competencies, the strategic importance of networks, the institutional frameworks that enable innovation, and the integration of digitalization, especially AI, with sustainability and social impact. The evidence gathered over the past decade points to three fundamental challenges: (i) updating human capital toward flexible, digitally literate, and ethically grounded profiles; (ii) strengthening social and intellectual capital to turn relationships into dynamic competitive advantages; and (iii) aligning institutions and technologies with sustainability and equity criteria.

Recent literature confirms that entrepreneurial performance continues to depend on human capital and entrepreneurial competencies (Marvel et al., 2016; Newman et al., 2019), with greater weight placed on specific human capital, sectoral experience and practical skills, over general education (Caliendo et al., 2023). Self-efficacy remains critical for persistence, risk-taking, innovation, and survival in early stages (Newman et al., 2019; Caliendo et al., 2023; Shatila et al., 2025). Consequently, the most effective educational models are those based on experiential learning and competency development (Martínez-Gregorio et al., 2021), which also incorporate indispensable digital skills for innovation and disruption response (Paul et al., 2023). Likewise, sustainability, uncertainty management, and ethics are positioned as essential transversal competencies (Bernadó & Bratzke, 2024).

Social capital and intellectual capital occupy a central place in entrepreneurial performance: structural, relational, and cognitive networks facilitate access to information, legitimacy, and financing, particularly in uncertain contexts (Fernandes & Ferreira, 2022; Xie & Wang, 2021; Tran et al., 2024). Digitalization extends this capital into the digital realm, though it also imposes challenges related to trust and governance (Bejjani et al., 2023), as observed in crowdfunding, where social and institutional signals strengthen campaign success (Zhang et al., 2025; Xu et al., 2025). Human, structural, and relational intellectual capital translates this access into effective innovation (Ali et al., 2021; Musman et al., 2025), and the interplay between social and intellectual capital emerges as an indispensable condition for converting resources into dynamic competitive advantages (Zacca, 2025; Gregori et al., 2025).

Institutional quality also affects the entrepreneurial environment: regulatory, normative, and cognitive pillars condition ecosystem vitality, and legal norms are insufficient without cultural legitimation of risk (Steinhauser et al., 2022). Universities, accelerators, and investors act as vital nodes for knowledge and financing (Masucci et al., 2024; Hochberg, 2016). In parallel, digitalization has generated digital entrepreneurial ecosystems that create new dependencies on dominant platforms (Bejjani et al., 2023; Cutolo & Kenney, 2021), while digital signals exert a direct impact on financing (Xu et al., 2025; Zhang et al., 2025). At the same time, green policies drive sustainable entrepreneurship ecosystems that demand collaborative governance among state, business, and academia (Singh et al., 2025; Lopez et al., 2025; Fernandes & Ferreira, 2022).

Finally, digital transformation and AI, especially generative AI, function as cognitive infrastructures that accelerate opportunity exploration and improve business decision-making (Uriarte et al., 2025; Li et al., 2025). However, they concentrate power and demand responsible governance to mitigate risks related to privacy and bias (Park et al., 2025; Yu & Sekiguchi, 2024), which is even more critical in contexts with a digital divide (Yu & Sekiguchi, 2024). Ultimately, sustainability and social impact are placed at the center of the entrepreneurial agenda, in line with the SDGs and the demands of conscious consumers (Muñoz & Cohen, 2018; Gast et al., 2017; Schaltegger et al., 2022). Nevertheless, challenges persist in defining them operationally, measuring them, and scaling hybrid models, especially in Latin America (Cohen & Winn, 2007; Shepherd & Patzelt, 2017; Fichter & Tiemann, 2020; Saebi et al., 2018). Yet experiences such as B Corps and green startups demonstrate that sustainability and profitability can be aligned, especially when digitalization enables traceability and transparency (Zahra et al., 2014; Wright & Nyberg, 2015; Seelos & Mair, 2021; Hockerts & Wüstenhagen, 2010; Biberhofer & Rammel, 2017).

Conclusions

This review indicates that the fundamental challenges of contemporary entrepreneurship center on four key aspects. First, the need to upgrade human capital by incorporating digital and ethical competencies to face an increasingly technological and complex environment. Second, transforming social and intellectual capital into

dynamic competitive advantages, linked to effective management of networks, knowledge, and collaborative resources. Third, the imperative to reduce gaps and dependencies within digital ecosystems to ensure equitable access and prevent concentrations that limit innovation and inclusion. Finally, measuring and scaling sustainable impact, which requires clear methods and policies to combine profitability with social and environmental responsibility.

In line with these premises, current trends point toward increasingly collaborative and digitalized entrepreneurial ecosystems, where responsible governance plays a crucial role in balancing diverse interests and maximizing social and environmental benefits. From this perspective, a renewed profile of the 21st-century entrepreneur emerges, one who acts as an active agent of change capable of articulating technological innovation, social equity, and environmental sustainability. The goal is to generate economic value with a conscious purpose that transcends mere profitability, thereby promoting inclusive, resilient business models aligned with the Sustainable Development Goals.

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- **Authorship contribution:** All authors declare that they meet the authorship criteria recommended by the International Committee of Medical Journal Editors (ICMJE).
- **CRediT Roles:**
  Carmen Rosa Zenozain Cordero: Conceptualization, formal analysis.
  Sara Delfina Pierrend Hernández: Research, data curation, proofreading.
  Berenice Amelia Casaró Llontop: Research, validation, visualization.
  Sara María Manchego Odar: Supervision, critical review.
  Lizardo Elías Agüero Del Carpio: Writing, proofreading, and editing.
- **Conflicts of interest:** The authors declare no conflicts of interest.
- **Funding:** None (public secondary data sources, cited in the references and acknowledgments).