

**TRANSFORMING ENTREPRENEURIAL ECOSYSTEMS: EXPLORING SUSTAINABLE,  
CIRCULAR, AND DIGITAL PATHWAYS FOR THE FUTURE**

**ROBERTA DUTRA DE ANDRADE**

UNIVERSIDADE FEDERAL DO CEARÁ (UFC)

**RAYSA GEAQUINTO ROCHA**

UNIVERSITY OF ESSEX

**PAULO GONÇALVES PINHEIRO**

UNIVERSIDADE DA BEIRA INTERIOR

**LUÍSA MARGARIDA CAGICA CARVALHO**

INSTITUTO POLITÉCNICO DE SETÚBAL

## **TRANSFORMING ENTREPRENEURIAL ECOSYSTEMS: EXPLORING SUSTAINABLE, CIRCULAR, AND DIGITAL PATHWAYS FOR THE FUTURE**

### **Introdução**

Most EE definitions about entrepreneurial ecosystems ignore the entrepreneur's role in creating new values. The specific attributes distinguishing different ecosystem types, hereafter referred to as boundaries, and their contribution to achieving ecosystem-specific goals still need to be clarified. This research aims to provide rigorous conceptual clarity to address the gaps in a comprehensive framework encompassing diverse methodologies, theories, and approaches, integrating elements such as venture geography, innovation adoption, and knowledge sharing.

### **Problema de Pesquisa e Objetivo**

This research aims to provide rigorous conceptual clarity by conducting a systematic literature review to address the gaps of a comprehensive framework encompassing diverse methodologies, theories, and approaches, integrating elements such as venture geography, innovation adoption, and knowledge sharing. This study seeks to answer three sequential research questions: (1) What are the conceptual boundaries of different ecosystem types? (2) What are the primary pillars of ecosystems? (3) What future research is needed to understand how ecosystem boundaries facilitate achieving ecosystem goals?

### **Fundamentação Teórica**

Entrepreneurial Ecosystem has become a central topic in entrepreneurship research. However, definitions must be more consistent. Past studies have explored various facets when addressing entrepreneurial ecosystems. Scholars concur that the ecosystem literature needs more consensus on the empirical scope and faces conceptual proliferation permeated by different approaches. However, the specific attributes distinguishing different ecosystem types, hereafter referred to as boundaries, and their contribution to achieving ecosystem-specific goals still need to be clarified.

### **Metodologia**

A systematic literature review protocol was used to ensure primary research's greatest strength, synthesis, significance, pertinence, and reliability in a specific field. Data analysis was carried out in two stages: meta-analysis was performed using the Bibliometrix - Biblioshiny on R-Studio software, and qualitative cluster analysis was based on the author's keywords co-occurrence similarity after the Academic Journal Guide ABS 2021- 4&3\* filter and citation ranking per time slice. Subjective criteria were used for qualitative cluster analysis.

### **Análise dos Resultados**

Our research provides an enhanced understanding of how this domain has evolved, supported by business geography, innovation adoption, and knowledge sharing. Four thematic groups were distinguished - (i) knowledge-based systems - focusing on metrics for entrepreneurship and helix collaboration; (ii) innovation systems - highlighting digital and spatial affordances and innovation efficiency; (iii) entrepreneurial ecosystems - emphasising environmental impact and EE resilience, and (iv) digital entrepreneurial ecosystems - marked by digital transitions.

### **Conclusão**

The findings contribute to the field by delineating four key clusters emphasising the integration of knowledge between industry and academia, offering strategies and metrics for entrepreneurship, and exploring intricate dynamics. It elucidates ecosystems as dynamic environments fostering

collaboration, knowledge exchange, and collective learning essential for entrepreneurship and innovation. It highlights digital entrepreneurial ecosystems within the digital economy, stressing collaboration, technological transitions, and institutional changes for sustainability and innovation promotion.

**Referências Bibliográficas**

Audretsch, D.B.; Rocha, H.; Aggarwal, S.; Bramanti, A. Do Entrepreneurial Ecosystems Foster Sustainable Development? *Int. Entrep. Manag. J.* 2024, 20, 1-37  
Karahana, M. Advancing Sustainable Entrepreneurial Universities: Sustainability Transformations of University Business Incubators in Germany. *SMALL Bus. Econ.* 2024, Baldwin, C.Y.; Bogers, M.L.A.M.; Kapoor, R.; West, J. Focusing the Ecosystem Lens on Innovation Studies. *Res. Policy* 2024, 53  
Bakry, D.S.; Daim, T.; Dabic, M.; Yesilada, B. An Evaluation of the Effectiveness of Innovation Ecosystems in Facilitating the Adoption of Sustainable Ent