

**DIGITAL ENTREPRENEURIAL ECOSYSTEMS: DECODING HIGH-VALUE  
ENTREPRENEURSHIP'S LEVELS OF NEEDS IN EMERGING ECONOMIES**

**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

## **DIGITAL ENTREPRENEURIAL ECOSYSTEMS: DECODING HIGH-VALUE ENTREPRENEURSHIP'S LEVELS OF NEEDS IN EMERGING ECONOMIES**

### **Introdução**

Previous research indicates that every element is indispensable in the DEE (Audretsch & Guerrero, 2023; Isenberg, 2010). The literature is vast in reporting specificities that make it impossible to replicate DEE management models in emerging economies, no studies were found that measured the DEE of emerging economies (Cao & Shi, 2021) and compared them with advanced economies. The necessity of individual elements within a DEE has yet to be empirically tested. New high-valued entrepreneurship measures were used: startups, unicorns, and digitally-enabled unicorns. even opportunities.

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

Our research questions are: (i) What elements of DEE are needed to generate startups, unicorns and digitally enabled unicorns?; (ii) Which elements of DEE represent different bottlenecks for generating digitally-enabled startups, unicorns and unicorns in emerging economies? The queries underscore an ongoing exploration within the DEE literature, emphasising the need to discern the relative importance of each element in shaping the dynamics of digital entrepreneurship. This study aligns with the research imperative to uncover the real bottlenecks within entrepreneurial ecosystems.

### **Fundamentação Teórica**

We propose adopting a CAS approach which facilitates a more comprehensive and holistic interpretation of DEEs that accounts for their complexity, interdependencies, and dynamics. The theory of complex adaptive systems, which highlights the interactive and evolutionary dynamics of the components within a system, continuously adapting to new environmental conditions and stimuli, aligns with the theory of digital entrepreneurial ecosystems by emphasising the importance of interconnectivity, continuous innovation and adaptation to technological changes.

### **Metodologia**

We employed fs/QCA (Dusa, 2022) and NCA (Dul, 2016). Fs/QCA helped identify the conditions for producing startups and unicorns, while NCA revealed which elements of entrepreneurial ecosystems were essential for achieving the same results. Data on startups were gathered in the Startup Ranking, Morgan Stanley Capital International, CB Insights, and Asian Index of Digital Entrepreneurship Systems. Two software were used: (i) FsQCA version 4.1. , and (ii) R-4.3.1 and RStudio.

### **Análise dos Resultados**

Fs/QCA findings reveal only one necessary condition for startups - physical infrastructure; NCA demonstrates that eight DEE elements are necessary for startups, with most also essential for unicorns. Bottlenecks in formal institutions, regulations, and taxation are identified across all economies, while network support and physical infrastructure are not bottlenecks for any economic outcome.

### **Conclusão**

Our results differed significantly from the literature. The qualitative analysis pointed to similarities in the generation of startups and differences in the generation of unicorns. The needs analysis pointed to divergences between economies. The bottlenecks analysis found similarities in the

Network and Support and Finance elements, albeit at different threshold levels. We concluded that different economies need different metrics and paths to overcome the same bottlenecks. The theoretical additions through CAS lenses encompass a conceptual framework that unifies disparate layers of DEE.

**Referências Bibliográficas**

Acs, Z. J., Song, A. K., Szerb, L., Audretsch, D. B., & Komlósi, É. (2021). The evolution of the global digital platform economy: 1971-2021. *Small Business Economics*, 57(4), 1629-1659. Audretsch, D. B., Belitski, M., Caiazza, R., Chowdhury, F., & Menter, M. (2023). Entrepreneurial growth, value creation and new technologies. *JOURNAL OF TECHNOLOGY TRANSFER*, 48(5, SI), 1535-1551. Stam, E., & van de Ven, A. (2021). Entrepreneurial ecosystem elements. *Small Business Economics*, 56(2), 809-832.