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NATIONAL SYSTEMS OF DEEP-TECH ENTREPRENEURSHIP: A CONFIGURATIONAL ANALYSIS FROM PANEL DATA

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Introdução

The national systems of entrepreneurship (NSE) approach, posits that the performance and growth of new ventures arise from an intricate interplay of individual attributes and contextual forces. This model underscores the cognitive characteristics of entrepreneurs, such as opportunity recognition and self-efficacy, which interact with various dimensions of the national context—including institutional, social, economic, and technological factors—thereby influencing entrepreneurial dynamics.

Problema de Pesquisa e Objetivo

Our research proposes a reinterpretation of the concept of NSE to better understand the factors that promote the creation of deep-tech startups. Our article has a twofold objective: first, to identify the necessary conditions for deep-tech entrepreneurship to thrive; and second, to evaluate whether the formation of deep-tech startups is affected by varying configurations of national entrepreneurship systems.

Fundamentação Teórica

In this paper, we use two concepts, deep-tech startups and national systems of entrepreneurship (NSE). The deep-tech startups refer to companies that are intensive in research and development (R&D) and that explore scientific and technological advances. While NSE can be defined as “those economic, social, institutional and all other important factors that interactively influence the creation, discovery and exploitation of entrepreneurial opportunities” (Qian et al., 2013, pp. 3–4).

Metodologia

In this paper, we collected panel data for 60 countries. The data refer to the number of deep-tech startups, conditions related to the entrepreneurial context, such as public policies, knowledge creation, among others, and conditions inherent to the population, such as opportunity perception, self-efficacy, etc. Subsequently, we applied necessary conditions analysis and causal modeling with coincidence analysis to identify necessary and sufficient conditions for deep-tech startups.

Análise dos Resultados

We found that, individually, only institutional NSE variables are necessary for deep-tech startups. However, when we applied causal modeling with coincidence analysis, we identified five causal paths of NSE that involve both institutional conditions and entrepreneurial characteristics of the population, such as opportunity perception and self-efficacy. In all causal paths, financing proved to be the main necessary and sufficient condition.

Conclusão

Our research aimed to identify the essential conditions and configurations within NSE that contribute to the creation of deep-tech ventures. Our findings indicate that the emergence of DTS is influenced by a combination of contextual factors – such as public policies, technology transfer, and financing – and individual factors – including opportunity perception, self-efficacy, and risk tolerance. Consequently, our study enhances the field of deep-tech entrepreneurship by utilizing a holistic approach to identify successful configurations that lead to startup formation.

Contribuição / Impacto

By utilizing the NSE approach, we offer a new perspective for entrepreneurship studies, particularly when it comes to exploring the role of individual and contextual factors in the creation of DTS. By adopting the NSE perspective, this research moves away from traditional approaches that focus solely on individual factors or contextual/institutional determinants of entrepreneurship. Furthermore, evaluating deep-tech entrepreneurship through the NSE lens represents an advancement compared to DTS studies that focus solely on firm-level characteristics or the institutional environment.

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