

TECHNOLOGICAL INNOVATIONS AND COLLABORATIVE NETWORKS FOR SUSTAINABILITY: EXPLORING THE POTENTIAL OF CEARÁ'S RENEWABLE ENERGY RESEARCH AND INNOVATION NETWORK (REDE VERDES)

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Introdução

Faced with the global challenges related to climate change, innovation can play an important role in the process of decarbonizing the planet (Matos et al., 2022). In periods marked by environmental challenges such as climate change, it is understood that adopting a form of collaboration that fosters the connection between various actors and institutions to promote sustainable innovations in the area of renewable energies (REs) is strategically efficient.

Problema de Pesquisa e Objetivo

what is the potential of innovation networks to promote the development and dissemination of technologies in the field of renewable energies? With this as a basis, the article's main objective is to analyze the innovative potential of renewable energy innovation networks, with the main focus on the Ceará Renewable Energy Research and Innovation Network (Rede VERDES), a network structure that works to promote sustainable solutions in the field of REs.

Fundamentação Teórica

With regard to the configuration of the network, studies show that it has the potential to affect the diffusion of knowledge at different levels (Hua, Yang & Shao, 2022). guaranteeing environmental sustainability poses a series of challenges for public leadership and innovation is an essential element in combating the challenges of the current context (Schwella, 2005). Green innovation networks emerge from a movement that starts from the moment that innovation activities gradually show a pattern of network development (Li; Liu; Ye, 2023).

Metodologia

The methodology adopted in this study was based on the Social Network Analysis (SNA) approach. Using SNA, it was possible to map and analyze the interactions within the Ceará Renewable Energy Research and Innovation Network (VERDES Network). This analysis included 141 researchers from the Green Network. In order to establish the connections between the actors, the research used secondary data collection, by consulting the Directory of Research Groups in Brazil and the Lattes Platform Curriculum. The data collected was processed and analyzed using two software packages, Excel and UCINet.

Análise dos Resultados

The study revealed that researchers with Research Productivity Scholarships have a greater capacity for interaction on the network. The Scientific Collaboration Network demonstrated a dependence on these actors, who concentrate a considerable part of the interactions identified. Academic institutions such as UFC, IFCE and UECE are more central in scientific collaborations, while IFCE assumes this position in the Patent Network. The analytical scenario demonstrates that the orchestration of the innovation network analyzed acts through a process of discrete influence (Ritala et al, 2012)

Conclusão

the network showed a high level of engagement in scientific collaboration, especially in the production of articles and research projects. However, there was little mobilization in the production of patents, with a low number of connections. The Patent Network had the lowest density index of all

the criteria analyzed, and part of the interactions were concentrated among a small group of researchers, indicating the network's low capacity to connect to promote patents. In this way, the interactions of the Scientific Collaboration Network are more concentrated in the central part.

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