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QUINTUPLE HELIX MODEL - A NEW APPROACH TO EXAMINING METROPOLITAN INNOVATION SYSTEMS

Academic paper

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Abstract text:

Purpose

The main purpose of this paper is to introduce a new version of Quintuple Helix Model to examining metropolitan innovation systems. This model is based on the assumption that creativity and collaboration are driving forces of innovation and urban development, and consequently they have a crucial role for achieving social welfare. This idea is based on foundational research by Professor Etzkowitz and Professor Leydesdorff and its further development by Professor Carayannis and Professor Campbell (Etzkowitz and Leydesdorff, 1995, 2000; Carayannis, Barth and Campbell, 2012). A new version of Quintuple Helix Model includes following helices: Business, Academia, Government, Arts & Culture and Society. Interrelations between them result in social welfare. The proposed research approach based on the individual's creativity is an innovative proposal for the analysis of metropolitan innovation systems due to the fact that it combines an economic, socio-cultural and psychological approach to the functioning of cities.

Originality and value

The proposed research approach is a novel idea for the analysis of metropolitan innovation systems (both theoretically and practically). Examining the mechanisms of interdisciplinary collaboration is crucial for maintaining fruitful collaboration among actors representing different social groups which is increasingly important in today's networked world. Such a holistic approach will provide accurate tools for analyzing metropolitan areas due to the adequacy of the proposed extra helices and the specifics of a city environment. The new version of the Quintuple Helix model is a great tool to examine the interrelations with the focus on each actor of the system in collective creation of innovations and its contribution to social welfare. The proposed research approach is an adequate tool for further (also comparative) analysis of other metropolitan areas.

Design and methodology

To achieve the purpose of the research an extensive literature review will be conducted. The literature review will be the foundation for a theoretical framework that will explain the examined phenomena. During the process of literature review the most relevant theories, concepts, definitions, and models will be evaluated. Literature review will cover topics related to: Triple Helix Model and its further developments into Quadruple and Quintuple Helix Models (Etzkowitz and Leydesdorff, 1995, 2000; Carayannis and Campbell, 2009, 2011, 2012; Carayannis, Barth and Campbell, 2012; Carayannis, Goletsis and Grigoroudis, 2018); innovation and the knowledge economy (Nonaka, Toyama and Konno, 2000; Chesbrough, 2003; Swann, 2014; Carayannis, Campbell and Bast, 2015; Lundvall and Johnson, 2016); innovation systems with a special emphasizes on metropolitan innovation systems (Lundvall, 1992; Freeman, 1995; Cooke, Uranga and Etxebarria, 1997; Edquist, 1997, 2005; Batten et al., 2001; Cooke, 2001; Asheim and Gertler, 2004; Russell et al., 2015; Poppen and Decker, 2018; Russell and Smorodinskaya, 2018; Borrás and Edquist, 2019; Oliver, Hogan and Albats, 2020); the social and economic role of cities (Jacobs, 1969, 1984; Audretsch and Feldman, 1999; Glaeser, 1999, 2011; Florida, 2008; Abrahamson, 2014); creativity and collaboration (Boden, 1990; Amabile, 2012; Csikszentmihalyi, 2013). Critical literature review will be a solid ground for the proposed model.

Limitations and applications

Proposed theoretical framework is suitable for examining various types of metropolitan innovation systems (cities from different countries and continents, representing various cultural backgrounds, being influenced by various sets of institutional conditions, etc.). However, due to pivotal role of the sphere of arts & culture, this model is less adequate to examining non-urban ecosystems.

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Figure 1 A New Version of Quintuple Helix Model



Source: Own elaboration based on: Etzkowitz and Leydesdorff, 1995, 2000; Carayannis and Campbell, 2010, 2012.