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Benchmarking knowledge-based urban development performance: Results from the international comparison of Helsinki

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ABSTRACT

In the era of a global knowledge economy, urban regions that seek to increase their competitive edge, become destinations for talent and investment and provide prosperity and high quality of life to their inhabitants have little chance of achieving these goals without forming effective knowledge-based urban development strategies. The research reported in this paper aims to address the questions of how a knowledge-based urban development performance measurement can be undertaken and the value contribution of such measurement. The paper focuses on the city of Helsinki. This empirical study analytically investigates Helsinki's performance from the lens of knowledge-based urban development by comparing this urban region with eight international competitors, Boston, San Francisco, Birmingham, Manchester, Melbourne, Sydney, Toronto, and Vancouver. The results of the study not only reveal a clearer understanding of Helsinki's benchmarked performance and competitive edge considering the regional policy context along with strategic directions in strengthening its international standing and competitiveness but also provide useful insights for other urban regions that aspire to such development.

Introduction

Cities of the post-industrial age are characterized by a growing proportion of knowledge workers and the service-orientation of activities (Laihonen & Lonnqvist, 2010; Yigitcanlar, Baum, & Horton, 2007). At the same time, the role of agriculture and industrial manufacturing has been diminishing in these cities. Overall, it can be claimed that along with the development of the knowledge society, acknowledgement of the importance of knowledge and other forms of intangible assets has been growing (Carrillo, 2010). Naturally, the development paths of cities differ significantly, but the transition from a natural and physical resource-based manufacturing orientation to a knowledge-based service orientation seems to be a trend in many cities (Bontje, Musterd, & Pelzer, 2011).

Although knowledge is becoming a key resource for cities, other factors must also be taken into account while analyzing the performance of a city, as knowledge resources alone do not guarantee desired outcomes. Cities aim to provide a high quality of life for their citizens. Quality of life is influenced by a variety of issues such as environmental quality, safety, quality and availability of services, open and fair government and so on (Yigitcanlar, Velibeyoglu, & Martinez-Fernandez, 2008b). Thus, in the knowledge economy era, the performance of a city is a complex and multifaceted phenomenon. To capture this phenomenon, the concept of knowledge-based urban development (KBUD) has become highly popular in many urban regions that aim to increase their competitive edge, attract talent and investment, and provide prosperity and a high quality of life to their inhabitants (Knight, 2008; Kunzmann, 2008; van Wezemael, 2012; Yigitcanlar, 2009).

To analyze and improve the performance of a city, measurement information must be produced to capture the status of relevant variables. A few frameworks are available for conducting such measurements in the KBUD context (see Sarimin & Yigitcanlar, 2012). However, the application of these frameworks is not straightforward. Many issues, including the choice of factors to measure and data availability, must be considered. Furthermore, a key feature in the existing measurement models is the use of benchmarking to provide a point of reference for the interpretation of the measurement results (Huggins, 2010; Yigitcanlar, 2012). However, the choice of cities for benchmarks is not straightforward either—what is a relevant benchmark for a given city and why (Luque-Martinez & Munoz-Leiva, 2005)? Due to the problems related to such exercises and the limited number of prior studies, the value of benchmarks can be questioned (Greene, Tracey, & Cowling, 2007; Rondo-Brovetto & Saliterer, 2007).

The current paper examines KBUD performance evaluation from the perspective of a single city. The study asks two research questions. First, how is a KBUD performance measurement conducted? Second, what is the value contribution of such

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measurement? We aim to contribute to the prior literature on KBUD analysis by providing a detailed description of the measurement process and findings and critically evaluating the value of the new information.

In this study, the focal city is Helsinki, Finland, i.e., Helsinki metropolitan area. Helsinki is an interesting example of a knowledge city because it has accomplished many KBUD achievements and currently stands out as a thriving urban region in many international comparisons concerning knowledge economy adoption, knowledge city formation, competitiveness, R&D, education investment, knowledge generation, and quality of life and place (Vaattovaara, 2009). The principal factor in Helsinki's accomplishments has been the development of an innovative capacity through the creation of agglomerations of knowledge-intensive industries (Abetti, 2004). This innovative capacity originated from the strategic actions taken in the early 1990s at the national level (i.e., Finland as a knowledge economy) and explicit KBUD policies that were developed and persistently implemented in Helsinki (i.e., technopoles as urban strategies to build high-tech cities) (Pelkonen, 2005; van den Berg, Pol, van Winden, & Woets, 2005). Helsinki became a frontrunner in knowledge-based activities due to its early involvement with such activities. Across the globe, KBUD strategies have only recently been formulated under this rubric. Previously, strategies such as innovation milieus were developed; however, they were not comprehensive or citywide (van Winden, van den Berg, & Pol, 2007).

Although Helsinki's KBUD achievements are notable, the urban region is not immune to the impacts of global pressures and crises (Bontje et al., 2011). Helsinki encounters several serious challenges. Firstly, as mentioned in the OECD Report (OECD, 2002), Finland in general and Helsinki in particular lack a focused strategy of economic diversification (such as developing ICT activities beyond the mobile phone technology cluster scope) for securing long-term competitiveness. Today, a decade after this report, the diversification of knowledge economy activities is critical to Helsinki. This is primarily because Nokia, which houses its headquarters and main facilities in Helsinki, recently lost its leadership in the world mobile technology solutions. Another major challenge that Helsinki faces is the impacts of the global financial crisis, with the rapid spread of various economic and social problems across the Euro zone (Claessens, Dell'Ariccia, Igan, & Laeven, 2010). The impact of both of these challenges resulted in large employee redundancies and an increased risk of losing the competitive edge, including Nokia.

The present paper is structured as follows. After reviewing the literature on KBUD, a background on the development context and conditions of Helsinki is presented. This is followed by a report of the empirical analysis undertaken to scrutinize Helsinki's KBUD in comparison to eight international competitor urban regions and the results of the analyses. Then, the paper presents and discusses the key lessons learned. The paper concludes by stressing the value contribution of this benchmarking exercise and highlighting the insights on how to apply KBUD performance measurement.

Knowledge-based development of urban regions

The concept of knowledge economy, which is grounded in endogenous growth theory (Aghion & Howitt, 1998; Romer, 1990), emerged from an increasing recognition of the requirement for the generation, circulation and use of knowledge within modern economies. However, in recent years, emerging economies have also paid increasing attention to the process of transitioning to a knowledge economy. Thus, the knowledge economy phenomenon is fairly global (Cooke, 2002; Huggins & Strakova, 2012). In the era of the global knowledge economy, the world is becoming increasingly integrated, and knowledge is becoming the driving force for economic growth, societal development, and improvement in the competitiveness of not only the industrial system and firms (Konstadakopulos, 2003) but also urban regions (May & Perry, 2011).

In an empirical study, Lever (2002) finds a correlation between economic growth and the extent of the knowledge base in European cities, suggesting that urban regions that are centers of growth are also centers of knowledge. Thus, the competitive advantages of urban regions are no longer solely based on their natural resources or cheap labor, but are increasingly viewed in terms of their knowledge resources and exploitation of these knowledge assets (Johnston, 2011). How well an urban region responds to the challenge of knowledge economy depends on how well actors exploit new knowledge in the form of new product or process innovations and utilize their intangible assets, such as skills and creativity (Konstadakopulos, 2003).

As Asheim (2012) puts forward, since the beginning of the century, strong evidence has substantiated the argument of an urban turnaround. The traditional focus on urban regions and their development is 'business climate', i.e., launching policy measures to attract new business to support the growth of the existing industry. In recent years, this focus has been shifting toward a strong 'people climate' to attract and retain the talent in urban regions to form analytical (science-based), synthetic (engineering-based), and symbolic (art-based) knowledge bases (Asheim, 2007; Florida, 2002). Furthermore, urban regions are now viewed as playing a specific role in the creation of prosperous knowledge milieus (hence, establishing 'spatial climate') and in the management and humanization of knowledge and the provision of enabling conditions (thus, establishing 'governance climate') (Knight, 2008; Romein, Fernandez-Maldonado, & Trip, 2011; Yigitcanlar, O'Connor, & Westerman, 2008a). Based on this broadened perspective, knowledge-based development underpins the growth trajectories of urban regions (Vazquez-Barquero, 2007; Yigitcanlar, 2011).

Knight (1995, 2008) views knowledge-based development of urban regions, commonly referred to as KBUD, as the transformation of knowledge resources into local development to provide a basis for sustainable development and a social learning process in which citizens inform and are informed about the nature of changes that occur in their city. Kunzmann (2008) assigns KBUD a more operational role as a key planning approach that provides an important collaborative development framework for all parties (i.e., public, private, academic, community) in the development of future strategic and knowledge-intensive urban and regional policies that attract and retain talent and investment and nurture knowledge cities.

Perry (2008) indicates the differing perspectives of KBUD. She identifies the three dimensions of KBUD as process, product and acquisition, which differ in the relative importance of knowledge and space. In process-driven KBUD, knowledge is central and subject to change as a result of external pressures. In acquisition-driven KBUD, knowledge is only a small part of KBUD processes, which are embedded in a wider set of economic, social, and cultural processes. Finally, in product-driven KBUD, similar to the process-driven KBUD, urban is only implied and peripheral. However, as she indicates, only a perfect combination of all three dimensions into a holistic KBUD vision can deliver desired outcomes.

Van Wezemael (2012) emphasizes the heterogeneous context of KBUD due to its multidisciplinary and multifaceted nature, which limits its globally widespread inception. He suggests that KBUD should extend beyond a neoliberal agenda of economic progress and be viewed as a multiplicity and offer a rich potential to seek alternative urban transitions. Concerning the notion of alternative urban transitions and the combination of KBUD perspectives, Fernandez-Maldonado and Romein (2010) argue that

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