

# Chapter 6

## Smartness, City Efficiency, and Entrepreneurship Milieu

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### **ABSTRACT**

*The definition of smart city and its measurement are not shared. Different characteristics define a city as smart, which is strictly linked to urban efficiency and to entrepreneurship spirit in a multifaceted way as well as to citizens' well-being. On the basis of the comparison between city and entrepreneur behaviour and on the definition of Giffinger et al. (2007) of smart city, this chapter verifies the efficiency of a sample of European cities using a stochastic frontier approach. Departing from this analysis, the chapter develops the relative smartness definition based on the efficient use of its own resources and related to the different context. Moreover, as a city becomes close to the optimal value, the frontier will shift upward because of the more attractiveness and a new adjustment mechanism should be followed to become efficient again (virtuous cycle). Then, the concept of smartness becomes dynamic. This definition, taking into account city's performance, is able to sustain the entrepreneurship milieu of a city.*

### **INTRODUCTION**

In these recent years, making cities more liveable and more efficient has become the most important and no-longer postponable objective for policy makers. The transformation of cities in “smart cities” has emerged as the main urban change strategy to achieve. In the political debate, European Union (EU) introduced the smart city concept by issuing the SET (Strategic Energy Technology) Plan to foster economic growth in 2009. Along this plan, a smart city is defined as a city or a large conglomerate that aims to improve energy efficiency by undertaking as target the double level, i.e., 20/20/20. Moreover, the EU 2020 strategy (see Horizon 2014-2020 programme) is based on the definition of smart city developed by Giffinger et al. (2007) from University of Vienna and Ljubliana, especially focusing on the use of ICT within cities.

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The smart city notion is not new in the academic debate, and two main research branches can be identified. Firstly, the debate starts with Smart Growth Movement and New Urbanism Movement that, although some differences are present, they share the same aim: the aversion to urban sprawl. These movements in fact consider that cities should be more compact, walkable, mixed-uses, transit-friendly and finally should create a range of housing opportunities and choices (Knaap and Talen, 2005; Burchell et al., 2000; Gibbs et al., 2013). Secondly, research and development literature shows how innovation and ICT are the engine for growth and development of an economy and thus, economic, social and environmental sustainability is the main target to reach. These aspects, however, are strongly intertwined with human capital and education – or, following Florida (2002), with the creative class – in urban context. In fact, as underlined by Berry and Glaeser (2005), innovation, driven mainly by products and processes, requires increasing skilled labour force.

In this chapter, the behaviour of a city is associated to the entrepreneur's behaviour. Similarly to an entrepreneur that can maximize profit using efficiently all the resources, a policy maker is able to maximize citizens' well-being promoting within a city the efficient use of all the resources such as human and physical capital, labour, transportation, etc.. Following the hypothesis of output maximising, an urban production function distinguishing between production inputs and inefficiency factors using the stochastic approach (SFA) is estimated as well as the ranking of a sample of European cities' technical efficiencies, which represent the economic distance of each city from the optimal frontier. Providing a different approach where city smartness is based on the efficient use of its own resources and is related to the different context in which a city is situated, the analysis develops the concept of an "ideal" own city frontier, which represents for each city the optimal production function as a standard. So, the notion of smartness becomes relative and specific to a city. Introducing the dynamic view, the efficient production function can shift upward and a virtuous cycle is needed to become efficient again and so the reaction time of urban government reveals city efficiency.

The chapter is organised as follows. The first section illustrates literature background focusing on the relation between city efficiency and entrepreneurship *milieu*, the second section provides a parallelism between an entrepreneur and a city. In the third section, the efficiency of a sample of European cities is empirically examined. The fourth paragraph illustrates a new approach based on relative and dynamic smartness. In the last two sections, some recommendations on future research directions and some conclusions are presented.

## **CITY SMARTNESS, EFFICIENCY, AND ENTREPRENEURSHIP MILIEU**

The smartness notion is strictly related to territory, efficiency and innovation promoted by an entrepreneurship *milieu*. At urban level, the smart city concept, firstly related to energy saving and efficiency use issues, has been developed to include different aspects such as quality of life, environment, transport net, telecommunication facilities and so on.

Over the past 40 years, innovation and territory have been connected in different ways. Among the main theories, the industrial district of the Third Italy (Bagnasco, 1977), the industrial clusters (Porter, 1990), the science and technology parks (400 cases in Europe alone) and the so-called technopolis can be recalled. Innovation is mainly generated by three factors:

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