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The social effects of eco-innovations in Italian smart cities

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A B S T R A C T

The European Union promotes the paradigm of ecological modernization and the effectiveness of eco-innovations (European Environment Agency, 2014). This is evident, in particular, from the political and financial support that the Institution is devoting to smart cities. Thus far, most of the 'smart' projects developed in European cities focus on the theme of the environment and its efficient management (European Union, 2014).

However, what has not yet been adequately investigated is the issue of the social impact of these smart environmental projects (Beretta, 2014a, b, c). In particular, what seems important is the question of whether the projects with environmental objectives also yield beneficial results from the social point of view, with special reference to the issue of social inclusion. Who are the real beneficiaries of the projects of eco-innovation? Do the benefits extend to all citizens or are they likely to go to only some sectors of the population, often the wealthier ones, risking - among other things - promotion of the phenomenon of eco-gentrification? In more general terms, can we say that smart cities represent the 'ideal' settings for the achievement of simultaneous environmental, economic and social development?

This paper reports results from research conducted on smart environmental projects implemented in Italy and posted on the national web platform italiansmartcity.it. The project consisted in a qualitative analysis of the environmental projects presented, in order to analyze their social impacts, especially referring to the question of social inclusiveness and the risk of eco-gentrification. More generally, the analysis helps clarify whether the eco -innovations represent an effective tool for achieving sustainable development in the Italian context.

Having said that, it cannot be assumed that readers are familiar with the European and Italian contexts. Par. 1 opens with a table that gives definitions of terms which are potentially not clear. It then shows ways that the European Union is institutionalizing eco-innovation and smart cities, remaining on the latest debate on them. Par. 2 highlights the risk of the technological rut the European Union is falling into; par. 3 illustrates the main results of research carried out on the smart cities in the Lombardy Region regarding the social effects of eco-innovations; par. 4 attempts to draw a provisional conclusion.

1. Introduction

That the European Union is imbued with the paradigm of ecological modernization is well shown by the faith it has towards concepts such as green economies, smart cities, eco-innovation, technologies and so on [for a glossary of all terms, see the Appendix A]. For example, green economies, originally seen as a useful policy approach to tackle the economic and financial crisis that began in 2008, is today seen as a strategic way of delivering a fairer society in a better environment (European Environment Agency, 2014). In fact, the concept can today be understood as a way to achieve sustainable development: "essentially, the concept postulates that the transformation of the economy is a precondition for sustainable development" (Eurostat, 2013).

Eco-innovation is considered a primary enabling factor towards a green economy, especially as the policy framework for green innovation is already in place. While it is not the only element in creating a green economy, innovation can be a fundamental lever in guiding EU energy and material systems towards a radical transformation of practices. More generally, eco-innovation and green technologies are key to Europe's future and at the heart of the European Union's policies. As we read on the EU website,[1] the EU's economic prosperity and well-being is intrinsically linked to its natural environment, and the global demand for renewable energy and resource-efficient solutions will be a source of jobs and economic growth in the years to come. Above all, eco-

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[1] Europa.eu.

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innovation is considered vital for delivering the objectives of the Europe 2020 Strategy.

At the same time, the EU's 7th Environment Action Programme (7EAP)[2] sets out a vision of "living well within the limits of the planet", including the need to "turn the Union into a resource-efficient, green, and competitive low-carbon economy", by 2050. Meeting these objectives will require new technologies and approaches to business, while these innovative ideas will in turn make European companies more competitive and help drive their growth. More recently, the EU adopted a Circular Economy Strategy,[3] aimed to transform Europe into a more competitive resource-efficient economy with a key role for eco-innovation in the context of job creation, growth and competitiveness, as well as in environmental protection.

In line with the institutionalization of concepts such as the green economy and eco-innovation, the EU demonstrates its strong conviction also in smart cities, as emerges in its web site (http://ec.europa.eu/index_en.htm) and above all through analysis of its numerous financial initiatives. The instruments created in order to support the Europe 2020 Strategy—in particular Horizon 2020,[4] the Framework Programme for Research and Innovation for 2014–2020—will strengthen the role of eco-innovation and provide adequate financial means for the implementation of the Action Plan post-2013. Within this Framework Programme, projects adopted in smart cities are one of the main channels of financial support.

Although the Smart City concept had always been at the centre of international debate and of national interest, we can say that, even today, there is no clear international definition: starting off from the first definitions of Smart City (among others, Eger, 1997; Coe, Paquet, and Roy, 2001; Thorns, 2002; Giffinger et al., 2007; Hollands, 2008), over time there have been many others which demonstrate how the smartness of a city can be characterised by various factors.

Numerous examples demonstrate how massive use of technology should improve the environmental conditions of the city (Hall, 2000; Kanter and Litow, 2009; Think, 2011). Some point out that technological infrastructures should serve to improve the economic growth of the city whilst others argue that the technological infrastructures should be used in general to improve the quality of the services offered to residents—covering therefore not only the urban environmental sphere but also economic and social elements (cfr., among others: Anavitarte and Tratz-Ryan, 2010; Dirks and Keeling, 2009; Gonzalez and Rossi, 2011; Toppeta, 2010; Washburn et al., 2010). Further definitions concentrate on the theme of urban administration, some underline the promoting role required by the public administration (cfr., Accenture, 2011; Traz-Ryan, Velosa, and Jacobs, 2011), others assert the importance of citizen participation in the governance of the territory and the role of social capital (cfr., Caragliu et al. 2009; Giffinger et al. 2007; Hollands, 2008; Partridge, 2004; Rios, 2008).

Given the various aspects included in the term ‘smart cities’, many authors find it lacking in specificity (Hollands, 2008; Santangelo et al., 2013). What is clear is that whatever the definition adopted, terminology is to a degree rhetorical: as Hollands explains well "what city does not want to be smart or intelligent?" (Hollands, 2008, p. 305). In other words, numerous are the studies that underline the risks linked to an over-enthusiastic adoption of the term in question. Among these, in this paper, it is apt to recall some which concentrate on the social risks to smart cities—such as internal polarization, with the weakest sectors excluded from the international network and at the service of the wealthier (and interconnected). They pointed out how technology risked not being a means of greater democracy but a further distinction in the gap between the rich and poor between those off and on—line, between those obliged to stand by and watch those in power. Hollands (2008) for example shows in the city of San Diego during the economic boom the poverty levels increased, even though in the previous decade a low level of unemployment was registered.

Another 50 authors underline how smart cities (and in particular the so-called creative cities – Florida, 2002) risked becoming polarised not only from an economic point of view, but also socially, culturally, with, on one hand the “creative” workers and, on the other, the “uncreative class” without knowledge or specialisation in technologies. Almost always, in smart cities there is inequality in work and living conditions and areas of residence (Hollands, 2008), but also in the allocation of spaces (Byrne, 1999) and opportunities for free time (Chatterton, Hollands, 2003).

Thus smart cities do not seem particularly positive places as far as class distinction, inclusion or social justice are concerned As Hollands (2008) maintains, as far as such cities can boast the creativity of diversity, tolerance and culture, they would seem more interested in attracting “creative” workers, prepared from the technological point of view rather than using information technology and art for social inclusion.

2. The risk of being in a technological rut

As recently outlined by Pope Francis (2015) in his encyclical, politics has come to submit to the efficiency-oriented paradigm of technocracy, falling into serious forms of technological determinism. The problem lies not so much in the technology itself but the use made of it: technology represents a danger to human progress because, along with the economy, it obeys selfish reasoning of private profitability. Technology cannot replace politics, mainly because it can only provide solutions to specific and temporary problems, being however unable to grasp the complex relationships between the different aspects of the ecological and social system in which we live (Beretta, 2015).

The European Union's attitude towards eco-innovation and, more generally, towards technology betrays confidence in the potential of technological innovations, deemed able to meet the different needs of society in their various manifestations. At a city government level, there are, though, numerous risks associated with a vision of this kind. First of all, we are puzzled by what Mela (2009) calls "the two-way relationship between technological innovation and social needs" or a "paradigm based on a run-spiral between technological devices (imagined as more and more advanced) and needs (represented as more and more refined)". In addition, there is the risk that the unconditional trust in technology leads one to think that all that is technological is “good” and might lead “automatically” to the transformation and improvement of the city (many authors speak, in this respect, of “technological determinism”[5]). This may mean, for example, that public authorities accept uncritically every technological solution to the problems they have to solve,[6] giving up moving any critical position against it, and allowing, therefore, that the technological option overrides a priori the political choices thus becoming in itself “political” (Vanolo, 2013, p. 47). Added to that is the risk that urban development policies are flattened "on a single model applicable everywhere and linked to the mere application of technology solutions" (Vanolo, 2013, p. 47).

Some sociologists point out that technological solutions not only risk replacing politics but seem to require changes in the individual's behaviour in social life, behaviour not only considered difficult to achieve and also unacceptable in a society that gives great importance to personal freedom from governmental intervention (Heberlein, 1974;

[2] Environment Action Programmes provide a general policy framework for the European Union's environment policy in which the most important medium and long-term goals are defined and set out in a basic strategy, where appropriate including concrete measures. They date back to 1972; since then Seven Environment Action Programmes (EAPs) have been adopted so far, their duration ranging from 3 to 10 years.

[3] http://ec.europa.eu/environment/circular-economy/index_en.htm.

[4] COM (2011) 808/3 final: Communication from the Commission on Horizon 2020 — The Framework Programme for Research and Innovation.

[5] Eger, 2003; Graham, 2002; Hollands, 2008; Paquet, 2001.

[6] Among others, Dutton, 1987; Eger, 1997.