



Valuing the benefits of an urban park project: A contingent valuation study in Thessaloniki, Greece



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ABSTRACT

This paper aims to estimate the non-market benefits derived from the potential development of a new urban park in the city of Thessaloniki (Greece). The city of Thessaloniki has up to now a very low rate of proportional green space per capita. On this context a large metropolitan park was announced, as part of a large-scale redevelopment project, but the final decision has not been made yet. In order to help policy makers to their final decision, an ex-ante valuation of the potential benefits of the park is carried out in this study. A contingent valuation survey was designed and implemented aiming to estimate the willingness to pay of local residents for the provision of this park, as well as to determine the spatial scale at which these values are assessed. The main finding of this study is that people living within 20 min from the reference site are willing to contribute a significant amount of money to support this project. Another interesting outcome is that the willingness to pay for this project was not considerably modified during a period of economic recession (2010–2013), which is mainly due to the growing public awareness of the importance of green spaces, as well as of the benefits of the planned park.

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1. Introduction

1.1. The benefits of urban green spaces and urban parks

Green spaces – including urban parks – provide significant social, economic, environmental and health benefits to city residents, playing also a vital role by contributing to the quality of life in the urban setting (Tzoulas et al., 2007). These spaces may act, among others, as leisure, sport and recreational resources, as safe and exciting play areas for children, and as attractive backdrops to urban development (Bullock, 2008). Green spaces may also provide significant psychological benefits as a result of the associated environmental services (e.g. noise filtering, air purification, microclimate stabilization, and controlling storm-water runoff) and aesthetic ones (e.g. by decreasing the impact of built environment on psychological distress). In this framework the United Nations World Health Organization encourages local administrators to increase the provision of urban green spaces (WHO, 2006)

in order to meet a minimum availability of 9 m² of green open space per capita.

Specifically for the case of urban parks, their role in improving physical and mental health is substantial, as they can provide a sense of peacefulness and tranquility (Kaplan, 1983), reduce the stress of urban living and mental disorders (Hartig et al., 1991; Nowak et al., 1998; Hansmann et al., 2007; Ward Thompson et al., 2012), reduce criminal and anti-social behavior (Kuo and Sullivan, 2001), encourage physical fitness (Saz-Salazar et al., 2007; Saz-Salazar and García Menéndez, 2007; Coombes et al., 2010), reduce obesity (Wolch et al., 2011) and increase the effect of physical activity (Mitchell, 2013). With respect to their social role, as stated by Coley et al. (1997), urban parks may encourage the use of outdoor spaces, helping thus in increasing interaction between residents and thus contributing to social cohesion and social integration. Besides, as stated by Maas et al. (2009), social contact is likely to be a possible mechanism behind the relationship between green space and health. All the aforementioned positive effects make urban parks an important component of public health provision (James et al., 2009).

In terms of spatial scale, the benefits of urban parks can be classified into two main categories (More et al., 1988): (a) the on-site benefits, which are directly accrued by people using the park (including both active and passive users), and (b) the off-site (or

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external) benefits for the local economy and community. The off-site benefits are mainly expressed in terms of economic results due to the reduced costs of pollution and prevention measures at the local/regional level, as well as due to the increased attractiveness of the city – as a consequence of the aesthetic and recreational services provided by parks – which in turn may promote the city as a tourist destination and generate both revenues and employment (Chiesura, 2004; Majumdar et al., 2011).

1.2. The need for economic valuation of urban parks

Despite the above mentioned multiple benefits of green spaces, their critical role in urban sustainability has been either neglected or overlooked in most regional development and spatial planning policies (Sandstrom et al., 2006). Namely, cities' sustainability and regeneration strategies tend to focus mainly on the man-made and built components of the urban environment (Chiesura, 2004), while the green areas have so far received little attention and have been subject to considerable development pressures. Schipperijn et al. (2010) suggest that the lack of attention to green spaces is primarily due to their less obvious and indirect benefits in several societal fields, as well as due to their location specific effects. Furthermore, as pointed out by More et al. (1988), urban green is subject to development pressures because planners have been more or less unable to articulate its value in economic terms.

Hence, the overall benefits of urban parks – including all the non-priced benefits (i.e. those benefits that have a non-market nature) – should be taken into consideration in the decision-making process for urban planning and land management. These benefits have to be evaluated on a case-specific basis, trying to estimate the individual and social value of existing, renovated (redeveloped) and/or new urban parks. A proper valuation of urban parks' services can, among others, serve as the foundation for regulatory decisions, investment decisions or decisions about expenditures on public projects to preserve these areas (Lindsey and Knaap, 1999). An economic valuation can also help to justify any potential regeneration strategy (i.e. by means of a cost-benefit analysis) as it may counter-balance either the costs of such strategies or the benefits from other social policies/services. It should be also mentioned that the use of direct valuation methods based on survey data may be considered as a form of public involvement at an early stage of the planning process, which is likely to improve the public acceptance of the proposed plans/projects. Therefore, it is reasonable to say that public valuation of urban parks is a key factor in good governance and sustainable urban development (Hodge and Gordon, 2008) that has the potential to assist policy makers and local authorities to respond to the recommendations of European Commission for sustainable cities (Europ Commission, 1996).

1.3. Valuation of urban parks

A common problem regarding decision-making is the gap between the supply of scientific information and the relevant demand of policy makers. Such a pronounced science-policy divide appears very often in various types of environmental issues (McNie, 2007), as well as in urban planning ones (Brown, 2003; Van Stigt et al., 2015). In order to bridge this divide, scientists should produce information that is considered of the right kind, relevant and useful by decision makers. On the other hand, they should focus on providing as better decision frameworks as possible regarding the impact of plans on environmental, social, and economic values. Tyrvaïnen (2001) argued some years ago that little consideration has been given to the reliable and robust valuation of urban green space in order to effectively support decision-making. Since then, a number of studies have been conducted to estimate the economic value of

urban green space (including urban parks), influencing more or less the planning processes.

It should be noted that the estimation of the non-market benefits of urban parks is not a simple task, as it is difficult to assess their social and ecological services in economic terms. Nevertheless, if these benefits are not taken into account, the decision-making process will underestimate the role of urban parks in local communities. This problem has been traditionally addressed by using two different approaches (Saz-Salazar and Rausell-Köster, 2008):

- Revealed preference techniques, such as the travel cost method (based on park visitors' surveys) and the hedonic pricing models (based on the related property markets). A considerable number of hedonic models have been applied in the literature to examine the effects of urban green on residential property values. Some characteristic applications are the following: Luttik, (2000), Tyrvaïnen and Miettinen (2000), Jim and Chen, (2006a), Poudyal et al., (2009), Hoshino and Kuriyama, (2010), Czembrowski and Kronenberg, (2016).
- Stated preferences techniques, such as the contingent valuation method (CVM) and the choice experiment method (CE). CVM uses surveys and questionnaires to depict directly people's preferences and, eventually to elicit individual and social welfare estimates in monetary terms (Mitchell and Carson, 1989). On the other hand, CE is a technique that is based upon the premise that all goods and services can be described by their attributes (characteristics). So far, only a few CE studies have been conducted to assess the value of urban green spaces as a whole, as well as the implicit value of their attributes (Bullock, 2008; Tu et al., 2016).

CV is currently the most widely used stated preference method for valuing environmental assets. Its main advantage over the other techniques is that it enables the estimation of both use and non-use values and therefore it can help the researchers to capture the full range of benefits that the society obtains from urban parks. There are several applications of this methodology within the context of urban green space and urban parks, most of them during the last 15 years. These studies differ in the main research aim and, therefore, can be classified into four categories: (a) those that aim to elicit the value of the provision of new urban parks and green spaces (e.g. Jim and Chen, 2006b; Chen and Jim, 2011; Saz-Salazar and García Menéndez, 2007), (b) those evaluating the preservation of parks and/or green areas (e.g. Breffle et al., 1998; Kwak et al., 2003; Lorenzo et al., 2000; Lo and Jim, 2010; Pepper et al., 2005; Vesely, 2007), (c) those assessing the benefits of regeneration or improvement strategies (e.g. Damigos and Kaliampakos, 2003; Saz-Salazar and Rausell-Köster, 2008), and (d) those aiming to estimate the recreational benefits of city forests/parks – to inhabitants or tourists – without a specific planning strategy (e.g. Tyrvaïnen, 2001; Bernath and Roschewitz, 2008; Majumdar et al., 2011). In Greece, as far as the authors are aware, only two valuation studies were conducted so far in order to assess the benefits from urban open and/or green space (Damigos and Kaliampakos, 2003; Xifilidou et al., 2014), while there is no application of a CVM for the case of a new urban park.

2. Study area

2.1. The city of Thessaloniki

Despite the fact that the urban open-space networks in Greek cities have been a consistent target of land use planning, the achievements are still marginal and most town and cities (especially the two metropolitan agglomerations, Athens and Thessaloniki), are still a long way behind acceptable standards of open

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