Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 223 (2016) 62 – 68

Procedia
Social and Behavioral Sciences

2nd International Symposium "NEW METROPOLITAN PERSPECTIVES" - Strategic planning, spatial planning, economic programs and decision support tools, through the implementation of Horizon/Europe2020. ISTH2020, Reggio Calabria (Italy), 18-20 May 2016

Supporting Public-Private Partnership for economic and financial feasibility of urban development

Alessandra Oppio[a,]*, Francesca Torrieri[b]

[a] *Deparment of Architecture and Urban Studies, Politecnico di Milano, via Bonardi 3, 20133 Milano, Italy*
[b] *Deparment of Industrial Engeneering, Università degli Studi Federico II, piazzale Tecchio 2, Napoli, Italy*

Abstract

The paper is focused on the allocation of the surplus generated by the urban development intervention with the purpose of pointing out the advantages both of the private developer and of the local authorities within the context of negotiating Public private Partnership. In order to support Public Administration in dealing with private developers, the paper proposes an evaluation method based on the measurement of an indicator of capital gain's fair allocation whose robustness is tested by risk analysis.
The methodological approach is applied to a renovation project in the city of Milano as pilot case study for verifying its potential in supporting complex negotiation characterized by risk and uncertainty.

Peer-review under responsibility of the organizing committee of ISTH2020

Keywords: Economic and financial feasibility, Public Benefit, Private-Public Partnership, Urban regeneration

1. Introduction

In the last years many European cities have developed complex urban interventions through innovative forms of cooperation between the public and private sector. Differently from the traditional ones, typically represented by local government outsourcing public works to private companies, these kind of Public Private Partnership - PPP

* Corresponding author. Tel.: +39.02.23995176; fax: +39.02.23995400
E-mail address: alessandra.oppio@polimi.it

Peer-review under responsibility of the organizing committee of ISTH2020
doi:10.1016/j.sbspro.2016.05.299

(Green Paper, 2006) allow public and private sectors to work together for a common interests so to produce goods and services, while sharing risks, costs and resources (Copiello and Stanghellini, 2011).

Within this context the paper proposes an evaluation method for supporting the definition of the agreement between local authorities and private developers, considering the capital gain created by urban plans.

The paper is divided into three parts. The first describes the evaluation method used for exploring the negotiating power of local authority and private developers through an indicator based on the expected capital gain from the investment. In addition, a risk analysis has been performed in order to test the robustness of this indicator. The second section proposes an application of the evaluation method on a recent integrated plan (P.I.I.) in the city of Milano, developed on the basis of an agreement between a private developer and the municipality of Milano. The results are critically discussed under the perspective of a fair allocation of the advantages stemming from the urban development interventions. Finally, the last section draws up conclusion and outlines future research lines.

2. Evaluation method

In the context of negotiating PPP the focus is on the allocation of the capital gain generated by the urban development intervention with the aim of pointing out the advantages both of the private developer and the local authorities. The agreement between the two parties should be as fair as possible with reference to the strategic vision of the municipality about the public city defined by town plans and programs, the risk of the development project and the increase in land value generated by development project.

According to the model defined by Micelli (Micelli, 2004; 2011), the private and public advantage and their negotiating power should be estimated on the basis of the capital gain arising from the intervention, as described by the following formula:

$$Bpr = Vap - Vaa - Bpu$$

$$Bpr + Bpu = Vap - Vaa$$

$$\Delta r = Bpr + Bpu$$

And

Where
Δr = Capital gain
Bpr = private benefit
Bpu = public benefit
Vap = Land value after the development of P.I.I
Vaa = Land value before the development of P.I.I

To measure the balance between public and private partnership a quantitative indicator is evaluated on the bases of the following formula:

$$L = (\Delta r - Bpu) / \Delta r$$

In order to ensure a balanced allocation of the entire capital gain the incidence of the difference among the capital gain and the public benefit on the capital gain (L) should be equal to 0.50.

Given the presence of risk and uncertainty within urban development project appraisal (Morani P., Tajani F., 2013), this indicator (L) has been subjected to a test of robustness. The methodology proposed is referred to a deterministic approach (sensitivity analysis, scenario analysis) and a Quantitative Risk Analysis (QRA) (Saltelli *et al*., 2004). Deterministic sensitivity and scenario analysis are traditionally used to identify critical variables considering percentage variation of the input data and consequent results in the output of the model (Kahneman, D., & Tversky, A. 1979). In scenario analysis more variables vary simultaneously considering "optimistic and pessimistic" scenarios. But deterministic analysis is not able to consider all possible values of the variables, limiting