Valuing the Impact of Social Housing Renovation Programs: An Application of the Social Return on Investment (SROI)

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Abstract Urban regeneration operations refer to complex processes where it is necessary to provide the Decision Makers with integrated evaluation tools, able to consider the multiplicity of objectives and values and to include the opinions and the needs of the different stakeholders involved. In this context, the paper aims at investigating the methodology of Social Return On Investment (SROI), that is a very recent and innovative framework for measuring and accounting for the complex value related to an investment, including social, environmental and economic costs and benefits. Starting from a real—world problem, the paper describes the application of the SROI method for supporting the process related to the requalification of a social housing district located in Rovereto (Italy).

Keywords Social benefits · Urban regeneration · Stakeholders participation · Cost benefit analysis

1 Introduction

Urban transformation processes must face important changes that are emerging in cities. In particular, it is possible to highlight that in 2010, 50% of the world's population lived in urban areas and this figure is forecast to rise to 75% by 2050. Due to this increase in urban population, governments are required to figure out

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how to address the new demand of urban spaces, paying also attention to the reduction of soil consumption (Roberts 2000).

According to this approach, a crucial role is played by urban regeneration operations, meaning not only buildings restoration operations, but also programmes aiming at eliminating social decline, increasing the quality of life of the inhabitants, supporting the valorization of cultural resources, protecting the environmental system, bringing economic development and so on. Taking into consideration this complexity, it is of particular importance to provide the Decision Makers with integrated evaluation tools, able to consider the multiplicity of objectives and values when dealing with urban regeneration processes and to include the opinions and the needs of the different stakeholders involved (Bottero 2015).

The objective of the paper is related to an investigation of the methodology of Social Return On Investment (SROI) for supporting decision process in the context of urban regeneration operations. SROI is a framework for measuring and accounting for the complex value related to an investment, including social, environmental and economic costs and benefits (Nicholls et al. 2012). SROI was developed from social accounting and Cost Benefit Analysis but this method puts more emphasis on stakeholders involvement, transparency of the evaluation and verification of the results. Mention has to be made to the fact that the applications of the SROI are limited to the context of social economy and non-profit organizations while the research in the field of urban and territorial transformations is very poor.

Starting from a real-world problem, the paper describes the application of the SROI method for supporting the process related to the requalification of a social housing district located in Rovereto (Italy).[1]

2 Methodological Background

The methodology of SROI aims at measuring the changes that a certain project or policy is likely to produce. These changes are evaluated by social, environmental and economic outcomes that are estimated using monetary values. The method enables a ratio of benefits to costs to be calculated.

The SROI technique is a very recent implementation of existing evaluation approaches in the context of project, plans and programmes and it is based on social accounting and Cost Benefit Analysis (European Commission 2014). With respect to the aforementioned method, the SROI technique puts more emphasis on the involvement of the stakeholders groups in the development of the evaluation process.

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[1]The material used for the illustration of the case study application is based on the thesis work developed by Christian Ferro and Cristina Lodato at the Master Program in Architecture Construction City of Politecnico di Torino under the scientific supervision of the authors of the present paper.

From a methodological point of view, the SROI method is structured according to 6 subsequent stages (Nicholls et al. 2012).

2.1 Establishing the Scope and Identifying Stakeholders

In this stage it is necessary to explicit the boundary of the analysis, clarifying important parameters such as the purpose of the analysis, the audience, the available resources, the period of the study and if the analysis is a forecast or an ex-post evaluation.

This stage also concerns the identification of the stakeholders, that are defined as people or organizations that experience changes or affect the activity of the project under investigation. For each stakeholder, the analysis must clarify the reason of inclusion in the study, the method of involvement, the number of people to be involved and the period.

2.2 Mapping Outcomes

A very important phase of the SROI process consists in identifying the inputs of the project (for example, the financial value of the investment or the volunteer time and contribution of foods and services).

Once having estimated the inputs, it is necessary to describe the outcomes, which are a measure of the changes produced by the project for the different stakeholders groups previously identified.

2.3 Demonstrating Outcomes and Giving Them a Value

For each outcome, it is necessary to clarify one or more indicators that are able to tell whether the outcome has occurred in the operation under investigation and by how much.

Another part of this stage involves data collection of the selected indicators. The data may be available from existing sources or it can be necessary to collect them making use of interviews, focus groups, surveys etc.

In this stage it is also important to determine the temporal duration of each outcome.

The last step consists in identifying appropriate monetary values for the outcomes. In particular, the SROI methodology uses financial proxies to estimate the social value of non-traded goods to different stakeholders. Examples of these proxies are cost savings due to a certain project or increase in taxes. For other more intangible impacts, such as increase in environmental quality or in indoor comfort,

specific methods are available which are based on the paradigm of Total Economic Value and that are normally employed for the evaluation of public goods and services (Pearce and Turner 1990). Examples of evaluation methods include Contingent Valuation Method, Travel Cost Method or Hedonic Pricing models (Louviere et al. 2000; Rosen 1974).

2.4 Establishing Impact

In this stage it is necessary to define the deadweight, that is a measure of the amount of outcome that would have happened even is the activity of the project had not taken place. To calculate the deadweight, which is normally expressed as a percentage of the outcome, reference is made to comparison groups or benchmarks. Another important element is related to the attribution effect, that is an assessment of how much of the outcome was caused by the contribution of the project under examination. Attribution is calculated as a percentage (proportion of the outcome attributable to the project). Moreover, it is necessary to assess the drop-off effect; this variable allows to consider that the intensity of an impact may reduce over time. Drop-off is usually calculated by deducting a fixed percentage from the remaining level of output at the end of each year of the analysis.

Finally, it is possible to value the impact of each outcome as follows:

- Multiply the financial proxy by the quantity of the outcome in order to obtain a total value for each outcome;
- Deduce deadweight or attribution effects from the total value of each outcome;
- Repeat the calculation for each outcome;
- Add up the total to arrive at the overall impact of the outcomes.

2.5 Calculating the SROI

The first phase in calculating the SROI is to project the value of all the outcomes achieved in the future. Normally the temporal period are represented in years.

The second step consists in the calculation of the Present Value (PV) that allows costs and benefits related to different temporal periods to be added up. For the calculation of the PV the Eq. (1) is used (Manganelli 2015):

$$PV = \frac{V_t}{(1+r)^t}. \tag{1}$$

where V_t is the value of the impact at the t year and r is the discount rate.

For the calculation of the SROI, it is necessary to divide the present value of the benefits by the total investment, as represented in Eq. (2):

$$SROI = \frac{Present\_value}{Value\_of\_inputs} \qquad (2)$$

Mention has to be made to the fact that the value of the SROI represents a feasibility indicator for the project: in particular, the SROI value indicates the amount of social benefits that the project is able to deliver for 1 € of investment.

Finally, it can be useful to perform a sensitivity analysis on the results on the model. In particular, it is interesting to modify some figures (for example, drop-off, deadweight, attribution, financial proxies, quantity of outcomes, value on inputs etc.) and to see how these changes affect the final value of SROI.

2.6 Reporting, Using and Embedding

The final stage of the process consists in communicating the results to the stakeholders groups and in using the findings of the study in the preparation of the project.

3 Application

3.1 Description of the Case Study

The case used for the experimentation of the proposed method is related to a real-world operation. In particular, the application considers the requalification of the Brione social housing district located in Rovereto (Italy). The district is made by 16 buildings that are owned by the Regional Public Housing Authority (ITEA). The district is actually composed by 120 apartments that are rent-controlled. In order to face the demand of the ITEA for an increase in the number of apartments and for an overall requalification of the district, a new project has been proposed and it has been evaluated by means of the SROI methodology.

The project considers the construction of one new storey on the top of the existing buildings in order to expand the current supply and to create 60 new apartments. The project also considers energy retrofitting operations for the existing buildings by means of innovative technologies. The ground floor of the buildings will be renovated and new common spaces for social aggregation will be created. Moreover, the project takes into account the requalification of the external areas of the buildings and the creation of a new square, additional parking, pedestrian and cycle paths (Fig. 1).

Fig. 1 The project for the requalification of the Brione social housing district (*Source* Lodato and Ferro 2014)

3.2 Analysis of the Stakeholders

One of the first steps of the method consists in the identification of the main stakeholders involved in the project.

Table 1 details the relevant stakeholders for the case under investigation. As it is possible to see, the inhabitants of the district are crucial actors as they constitute the final users of the intervention. In the analysis, the inhabitants have been subdivided in different categories, namely aged people, young people and families with children as they express different objectives and values. Other important stakeholders are related to the different associations that are active in the area and the Regional Public Housing Authority that is the owner of the buildings and represents the "client" of the analysis.

Following the SROI methodology, all the stakeholders groups have been involved since the preliminary phases of the process by means of interviews, questionnaires and focus groups in order to understand their specific objectives and needs.

3.3 Evaluation of the Social Impacts of the Project

According to the SROI methodology described in Sect. 2, once having indentified the relevant stakeholders, it is necessary to map the outcomes generated by the project. Table 2 details the evaluation process for the project. As it is possible to see, the outcomes have been divided according to different categories, namely

Table 1 Stakeholders groups involved in the SROI evaluation

Stakeholders	Reason of inclusion	Mean of inclusion	Dimension
Families	Beneficiaries of the activities considered in the project	Questionnaire and focus group	Sample of 50 inhabitants
Aged people	Beneficiaries of the activities considered in the project	Questionnaire and focus group	Sample of 50 inhabitants
Young/students	Beneficiaries of the activities considered in the project	Questionnaire and focus group	Sample of 50 inhabitants
Citizens of Rovereto	Beneficiaries of cycle—paths and new aggregation poles	Questionnaire	Sample of 50 inhabitants
ITEA (regional public housing authority)	Owner of 50% of the apartments in the district	Interview	4–5 representatives
Associations for urban agriculture	Managers of the future activities (urban gardens)	Interview	1 representative
Local laboratories	Managers of the future activities (laboratories)	Interview	1 representative
District Authority	Managers of part of the future common spaces of the project	Interview	2 representatives

economy, education, social inclusion, mobility and health. For each outcome, a specific indicator, the source of information, the typology of beneficiaries, the quantity, the proxy for the evaluation and the estimated value are reported. It is important to put in evidence that for some outcomes the traditional estimation approaches based on market values have been applied. This is the case, for example, of the evaluation of the increase in the asset value due to the requalification project; in this case, the unit market price related to the zone under investigation has been applied for the calculation of the market value of the new apartments. In other cases, techniques based on the Total Economic Value (TEV) approach have been applied. This is the case of the estimation of the social benefits generated by the new square considered in the project; in this case, a simplified version of the Contingent Valuation Method (Carson 2000) has been applied for the evaluation of the Willingness To Pay of the inhabitants for the new space.

3.4 Calculation of the SROI

After having estimated the economic value for the full range of outcomes generated by the project, it is necessary to project them over the years and to calculate the SROI ratio. Moreover, it is necessary to estimate the inputs, that in this case are represented by the construction costs of the project. It is possible to highlight that these costs have been appraised following the comparative-unit method. In this case, the construction cost was estimated as 1,400 €/m^2 for the new apartments and 250 €/m^2 for the energy refurbishment of the facade of the buildings.

Table 2 Impacts map for the project under investigation

Category	Outcome indicators	Source of information	Typology	Quantity	Duration (years)	Financial proxy	Value [€]
Economy	Increase in income for the new inhabitants	Direct sources	New families	60	5	Reduction in rents (free rent – controlled rent)	2,018.25
	Increase in income for the old inhabitants	Direct sources	Old families	120	5	Reduction in energy bills (energy cost pre – energy cost post intervention)	817.80
	Market value of the apartment due to the new surface (balconies and lodges)	Indirect sources	Refurbished apartments	120	1	Market value [€/m²] * additional surface [m²] * estimation coefficient	15,534.00
	Market value of the apartment due to the requalification	Indirect sources	Refurbished apartments	120	1	Increase in market value [€/m²]*surface of the apartments [m²]	56,820.00
	New parking	Direct sources	Garages	153	5	Garage rent – parking rent	7,500.00
Education	Increase in income due to the new in educational activities	Questionnaire	People with an increase in salary	24	3	Part-time minimum salary	6,707.64
Social inclusion	Participation to the new activities proposed by the project	Questionnaire	New subscribers	66	1	Registration fee for project activities	360.00
		Questionnaire	People who will abandon their activities	/	1	Actual registration fee – registration fee for project activities	480.00
	Increase in quality of life of the inhabitants	Questionnaire	Potential users	66	5	Willingness To Pay (WTP) for the new square	35.00
Mobility	Availability of new pedestrian paths	Questionnaire	Potential users	36	5	WTP for the new connection with the park and the forest	5.00

(continued)

Table 2 (continued)

Category	Outcome indicators	Source of information	Typology	Quantity	Duration (years)	Financial proxy	Value [€]
	Availability of new cycle paths		Potential users	36	1	Registration fee for the bike-sharing	15.00
Health	Reduction of the impacts of the construction works	Questionnaire	People that would be willing to pay	96	1	WTP for reducing the impacts of the construction works	70.00
	Increase in sport activities	Questionnaire	People that will benefit from the sport facilities	/	1	Gym membership fee	500.00

Table 3 represents the economic table useful for the calculation. Considering a discount rate of 3%, the application of the formula (2) provides the final SROI ratio that is equal to 1.51. This value means that for each euro invested in the construction of the project, there will be 1.51 € of social benefits that the project is likely to generate for the stakeholders involved in the operation.

Table 3 Economic table for the calculation of the SROI

	Year 1	Year 2	Year 3	Year 4	Year 5
Benefits					
Increase in income for the new inhabitants	54,492.75	54,492.75	54,492.75	54,492.75	54,492.75
Increase in income for the old inhabitants	98,136.00	98,136.00	98,136.00	98,136.00	98,136.00
Market value of the apartment due to new surfaces	1,864,080.00				
Market value of the apartment due to the requalification	6,477,480.00				
New parking	1,124,550.00	1,124,550.00	1,124,550.00	1,124,550.00	1,124,550.00
Increase in income due to the new in educational activities	157,763.70	149,875.50	142,381.70		
Participation to the new activities proposed by the project	22,572.00				
Increase in quality of life of the inhabitants	1,848.00	1,848.00	1,848.00	1,848.00	1,848.00
Availability of new pedestrian paths	171.00	171.00	171.00	171.00	171.00
Availability of new cycle paths	513.00				
Reduction of the impacts of the construction works	6,720.00				
Total benefits	9,808,326.45	1,429,073.25	1,421,579.45	1,279,197.75	1,279,197.75
Total Inputs	9,564,328.00				
SROI	1.51				

4 Discussion and Conclusions

The paper illustrated the experimentation of the SROI methodology for the evaluation of a requalification project for the Brione social housing district located in Rovereto (Italy). The present research, that was developed in a strict collaboration with the ITEA, the Regional Public Housing Authority in charge for the district under investigation, represents one of the first applications of the methodology in the domain of urban and territorial transformation operations.

From the results of the application it is possible to state that the SROI method is able to represent the complexity of urban regeneration processes. The proposed model proved to be effective in informing in a transparent way the Decision Makers about the social performance of the operation and the achievement of the initial goals. This is particularly useful in the context of urban regeneration and energy retrofit operations, where a clear evaluation has to be done in order to examine the impacts on social welfare of this kind of interventions (Tyler et al. 2013). However, it can be noticed that the SROI approach is subject to some limitations due to the problems arising in the economic measurement of intangible costs and benefits. In fact, only in some cases the output of urban regeneration activities can be evaluated using market-based data. In other cases, as for example in the valuation of the environmental quality, it is necessary to apply specific evaluation methods, such as the Contingent Valuation Method (Carson 2000), that can result time-consuming, complex to apply and require a great cognitive effort from the analysis (Tyler et al. 2013).

From the point of view of the future perspectives of the study, it would be interesting to implement the model with an evaluation of the deadweight, attribution and drop-off effects in order to have a more complete picture of the impacts of the project.

Moreover, it could be of scientific interest to include in the model the analysis and the estimation of other outcomes, such as the impacts of the projects on public health or soil consumption and the benefits that the operation is able to generate in terms of increase in the quality of urban landscape (Capolongo et al. 2015).

Finally, further research could explore the application of sensitivity analysis on the results of the evaluation with the aim of verifying the stability of the model.

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