Assessing the Impacts of a Social Housing Project Through the Community Impact Evaluation (CIE) Methodology

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Abstract. Housing policies concern complex and multidimensional decision problems, as far as they engage different stakeholders with different objectives and values. Moreover, these policies represent a significant effort in reaching social sustainability, with the aim of encouraging community engagement and the reduction of social inequalities. Within this context, an evaluation tool able to manage multidimensional impacts derived from these policies is required in order to assess the nature and the degree of these effects on the involved stakeholders. The present paper proposes the application of a mixed method, composed by the SWOT, the Stakeholders Analysis (SA), and the Community Impact Evaluation (CIE) to assess the multidimensional impacts and the overall impacts of the Ma.Ri. House project (Turin) on the different engaged stakeholders. The final result is a qualitative and multidimensional evaluation performed in the ex-ante phase that highlights the complexity and the multidimensionality of the interventions underlying which are the main effects of the proposes project.

Keywords: Community Impact Evaluation (CIE) · Social housing · Stakeholder Analysis (SA) · Multidimensional impacts · Decision-making supporting systems

1 Introduction

Public policies, known as the "welfare state" started to be less effective at the end of the 80s of the last century. This happens due to some limits of this system, spanning from the huge tax burden of public financing and the standardized measures applied in all contexts [1]. The overcoming of this model helps to change the role of states and their margin of intervention in the field of welfare measures, establishing new relationships with other subjects, including private ones. This new policy framework is known as "welfare society", where private entities, market actors, and nonprofit social enterprises work with public bodies in the direction of providing strategies specific to the area and territory where they are activated, as well as integrating different social actions, avoiding the adoption of separate interventions [2].

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Housing policies have also followed a similar evolution. These measures were entirely managed by States during the 2WW reconstruction, but when public resources started to become limited, public and private partnerships have assumed even more strategic importance, built a closer relationship, and divided duties [3].

The impact assessment represents a good framework and tool to evaluate, in an *ex-ante*, *in itinere* and *ex-post* phase, a policy, project, plan, or program, in order to understand the stakeholders and resources involved in a process, as well as to trigger development processes whose effects can be measured in qualitative and quantitative terms. In the context of social housing policies and projects, the design of strategic actions is characterized by a multi-objective perspective and a multi-stakeholder view [4]. Consequently, it is necessary to rigorously set the design process, defining the objectives in an ex-ante phase and examining them in the medium term [4]. This allows the analyst to list, from the beginning, any externalities and effects affecting the local community system and the stakeholders involved in the process. The issue of externalities is crucial, whether positive or negative, in supporting social housing policies and strategies. However, their values are not always easily managed and assessed.

Housing policies are also engaged with the target of creating sustainable and inclusive cities and communities, as stated by the UN Sustainable Development Goals (SDGs) [5]. Thus, these interventions can contribute to achieve the social sustainability, through the promotion of community engagement and actions focused to reduce inequality, displacement, and poor quality of livability [6]. Therefore, the evaluation of the social impacts of physical elements and urban transformation is required [7].

Within this context, the present paper explores the potential of an integrated approach to evaluate the social impact of a social housing project in the city of Turin (Italy). The integrated approach adopts a SWOT Analysis, a Stakeholder Analysis (SA), and the Community Impact Evaluation (CIE) methodology. The novelty of the paper is related to the adoption and integration of CIE in the context of social housing assessment. In urban development and spatial planning, examples of CIE applications regard the evaluation of urban development projects [8–13], the estimation of costs and benefits for cultural built heritage conservation [14], and support for the design process [15]. Moreover, the framework proposed in this paper can be easily replicated and used for other decision-making problems, spanning from site to district/urban scale and from design projects to urban transformation programs.

2 Methodology

The present analysis proposes an integrated approach that adopts a SWOT Analysis, a SA, and CIE. The SWOT Analysis and the SA helped with the preliminary investigation of the context and the identification of the main stakeholders involved in the process. Then, the CIE methodology supports the evaluation of the multidimensional impacts (both positive and negative) generated by the project, as well as the impacts affecting the list of stakeholders previously detailed.

Developed around the 60s, the SWOT Analysis is a well-known technique aiming to analyze the strengths (S), the weaknesses (W), the opportunities (O), and the threats (T) of a complex problem [16]. The SWOT analysis aids in qualitatively identifying the

drivers that can maximize strengths and opportunities while minimizing weaknesses and threats.

SA is a widely applied methodology in spatial planning, proper to list and map all the actors influenced or involved in the process analyzed [17]. SA is, therefore, able to highlight the interests and objectives of the stakeholders, based on their values and preferences [18]. The inclusion and comprehension of these different values and preferences, as well as the relations among the stakeholders, help to include them in the evaluation and/or design process from the first stages, eventually predicting outcomes and possible resolutions of conflicts [19]. From a practical standpoint, SA starts with listing and collecting the involved stakeholders and some of their characteristics, such as their level of intervention (national, regional, local), the category of actors to which they belong (political, bureaucratic, special interest, general interest, experts), and the resources they use (political, economic, legal, cognitive), as well as their roles and expectations [18, 19]. Among the various techniques for conducting SA, the present research adopts a Power-Interest Matrix [20, 21]. As the name suggests, this technique shows the different power and interest of the stakeholders concerning the project/plan/policy under analysis, thus providing information on the key-players, those to be satisfied or keep informed, and those to monitor.

CIE is a qualitative methodology that supports the preliminary evaluation of a project, plan, or policy [22]. The results obtained from the application of CIE represent not a resolution of a complex problem, but a suitable tool for conducting a preliminary analysis of a decision-making process by including the objectives of the project/plan analyzed, their impacts and benefits, with the stakeholders' views and aspirations. The development of CIE is essentially composed of the following steps [15]. Step 1 contains an overview of the project/plan/policy and the context of analysis, where the effects of the transformation could have an influence. Step 2 is devoted to listing and mapping all the stakeholders involved in the decision-making process or influenced by the intervention. According to this different inclusion of the stakeholders in the process (i.e., involved or influenced), the stakeholders are classified in CIE as active actors (who directly take actions and do the transformation) and passive subjects (who simply use or benefit from the good or service). In CIE, stakeholders are also mapped according to the time in which they are most relevant (in the short or medium-long term) and their spatial location (on-site and off-site). In Step 3, all the project/plan/policy objectives are listed and compared with the stakeholders' aims. This analysis is instrumental in the decision-making process to predict and evaluate the stakeholders' interests in an *ex-ante* phase of the project/plan/policy proposed. Following the classification proposed by Lichfield (1998), the objectives and stakeholders' interests are examined according to three categories of impacts generated by the project/plan/policy:

- monetary effects, classified as financial (F) that address the cost and revenues of the interventions, and fiscal (FIS) which include tax advantage both for individuals and for the public;
- non-monetary impacts, classified as social (SOC), environmental (ENV), and cultural (CUL);
- mixed impacts, which refer to the economic impacts (ECO).

The evaluation of these aforementioned impacts is conducted for each stakeholder and for each objective by filling in an intersection grid, called a coaxial matrix, on a qualitative scale.

3 Case Study

This paper analyses the case study of the Ma.Ri. House project, a new temporary house located in the periphery of the city of Turin (Italy) (Fig. 1).

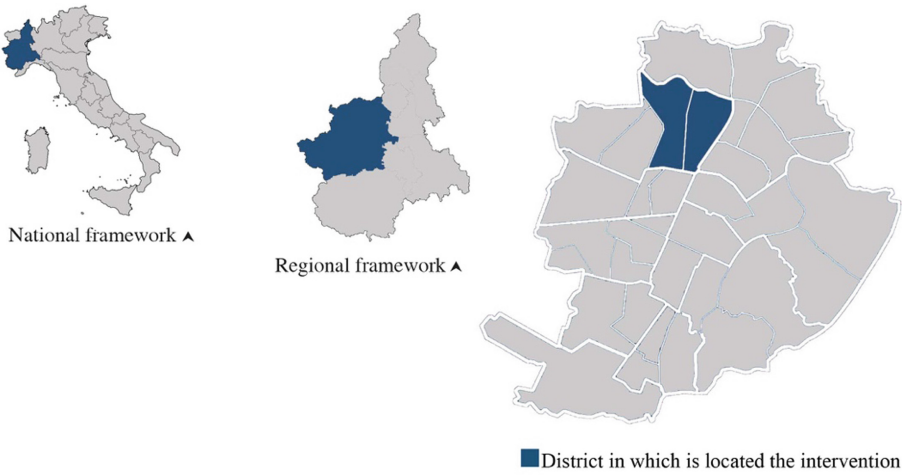


Fig. 1. Territorial framework

The main objective of this project is to provide a temporary residence for both vulnerable people and those who need temporary accommodation for work or study reasons. The principal investor is Compagnia di San Paolo, a bank foundation that is involved in several regeneration projects with specific attention to the housing issue. Along with Compagnia di San Paolo, others collaborate in the realization of the project, such as the Municipality of Turin, the Caritas Diocesana, and Synergica, a social cooperative managing the building. The Ma.Ri. House aims at responding to a temporary housing need (18 months maximum), allocating spaces for families in emergency or housing stress, students, and temporary workers. Furthermore, the project hopes to respond to needs at the neighborhood and municipal level by creating a cultural hub. Therefore, the result will be the creation of a functional mix able to respond to diversified social needs, which allows to achieve financial equilibrium and the economic sustainability of the intervention.

4 Application

As specified in the methodological section, this research combines SWOT, SA, and CIE. The SWOT analysis has been first performed to examine the area of intervention,

according to its strengths, weaknesses, opportunities, and threats. Figure 2 shows the SWOT analysis developed for the case study. Furthermore, this analysis can be used to help define actions that will highlight the strengths and opportunities while reducing the negative impact of the weaknesses and the threats.

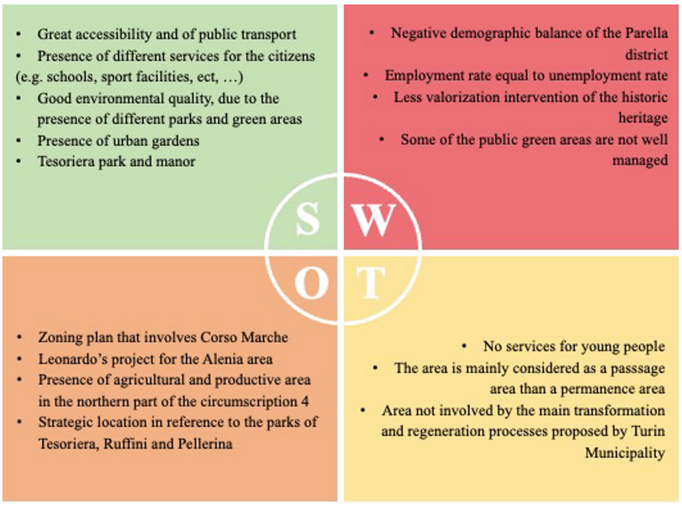
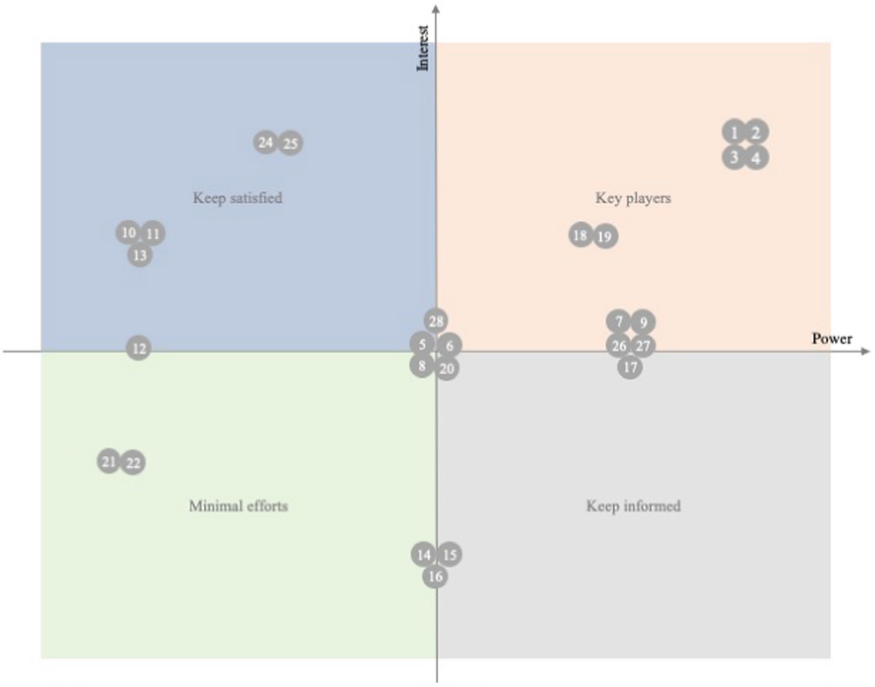


Fig. 2. SWOT analysis (elaborated from Mion, 2021)

Secondly, SA has been performed according to the power-interest matrix techniques. This analysis has been helpful in identifying the different stakeholders engaged in the project, as well as their objectives and position in relation to the project, categorizing them as "key players", "keep satisfied", "keep informed," and "minimal efforts". Figure 3 illustrates the developed power-interest matrix. As it is possible to see, the stakeholders Association Insieme per accogliere, Association Provincia Italiana dei Missionari di Nostra Signora delle Salette, Association Caritas of Turin, and the Social cooperative Synergica are identified as key players, according to their involvement in the financing of the project. Furthermore, SA is a fundamental step in developing the CIE in order to verify the different impacts on the various stakeholders.

The project Ma.Ri House is based on three general objectives, i.e., building temporary housing (1), accompanying people towards housing independence (2), and the creation of a cultural hub (3). These three objectives, respectively, refer to three fundamental dimensions, i.e., housing, social, and territorial. They share a common social view and various interconnected elements. The topic of housing deprivation, in fact, is not simply limited to the difficult access to the real estate market, but also to the reduced employment, social, and cultural opportunities in the city. For this reason, the project proposes affordable housing integrated with spaces for social gathering and personal empowerment in the same place.

The strategic vision of the three general objectives is put into place in the project through a set of specific goals, as it is possible to see in the two columns of Table 1. For example, different targeted people are considered in the development of the social



1	Insieme per Accolgiere association
2	La Provincia Italiana dei Missionari di Nostra Signora delle Salette
3	Caritas Diocesana di Torino
4	Synergica social association
5	Peirolo design studio
6	Accountant study
7	CRT Foundation
8	Magnetto Foundation
9	Compagnia di San Paolo Foundation
10	Pastorale Migranti
11	Pastorale Universitaria
12	Listening centre Due Tuniche
13	Pio Office
14	Politecnico di Torino

15	Leonardo Company
16	Thales Alenia Space Italia
17	City of Turin
18	Public Housing office
19	Social services
20	Circumscription IV
21	Carlo Cattaneo Scientific high school
22	Carlo Levi Institute
23	Social and cultural associations
24	Vulnerable people of the neighbourhood
25	People waiting for council houses
26	Citizens
27	Students
28	Residents of the neighbourhood

Fig. 3. Power interest matrix (Mion, 2021)

housing, i.e., fragile people, the citizens living in the deprived location, the off-site students, and the occasional workers.

According to CIE, once the objectives of the plan, project, or policy under investigation are identified, it is possible to classify and assess the different impacts (Table 1). Following the classification proposed by Coscia & De Filippi (2016) [23], the cluster

divides the impacts into monetary and non-monetary. The sub-cluster consists of financial, fiscal, economic, social, cultural, and environmental impacts. The financial impact includes all the costs and revenues produced by the project, including those generated outside the transformation area. Examples of financial impacts in the Ma.Ri project are related to the capital investment for the building requalification and the implementation and promotion of socio-cultural initiatives. The fiscal impacts are the fiscal advantages connected to the project realization considering the current policy law. The present analysis does not consider the fiscal ones, thus the tax or fiscal benefits related to the project, since they are not relevant in the current phase of the investigation, as well as coherent with the objective of the developed analysis. The economic impacts collect the benefits that public and private stakeholders indirectly gain from the project as an externality. For example, the project can improve the existing building conditions in the area and increase the surrounding real-estate market values or create new job positions. The social impacts refer to social benefits generated by the project that involves the improvement of the sense of community, quality of life, and the citizens' well-being. The project can improve the social conditions through additional services and activities offered to neighbors, the creation of new social relationships and supportive networks, and the reduction of citizens living in a deprived state. The cultural impacts affect the developed of new cultural poles or enterprises, but they also experiment with new business models and the technical knowledge related to them. All these aspects can be achieved by the project, increasing the population's awareness of social topics and social interactions, as well as the experimentation with new business models grounded in a sharing economy. The environmental impacts consider all the positive and negative effects of the project on the environmental quality of the building and the surrounding areas. The renewal of an existing building is undoubtedly positive in terms of soil consumption and land take, as well as the reorganization of the public spaces and, particularly, the existing garden.

Then, analyzing the stakeholders involved, it is possible to state that above their different position in the power-interest matrix, they generally have similar views and objectives related to this project, considering all the three general project objectives equally important. Exemptions are those stakeholders with a very specific interest, such as, for example, schools that are more interested in the territorial dimension as an occasion to make and increase the network with citizens. Conversely, the three main foundations, which finance the project, aim for the complete realization of the project in all its dimensions. This analysis supports the following step of CIE, where the impacts are associated with the stakeholders influenced by them. In most cases, a single stakeholder is affected by many types of impacts, due to the strong connection between the project and social, cultural, and environmental aspects. The coaxial matrix represented in Table 2 shows both the partial and final qualitative evaluation of the impacts for each stakeholder and for each objective of the project, highlighting if the influences are positive or negative. The qualitative judgment follows a 7-point scale from very bad influence (red) to very positive influence (green). The final judgments are simply the summation of the partial judgments of each stakeholder. From Table 2, it is possible to clearly appreciate the financial losses of the key players in the project and the banking foundations. Conversely, many positive impacts generated by the project, particularly social, cultural, and environmental, effectively counterbalance the negative ones. The

coaxial matrix additionally highlights how the housing objective is the most negative one in terms of financial expenses but also the most positive in terms of non-monetary impacts, since it contributes to ameliorating the well-being and quality of life of the citizens and the people living there, generating cultural innovations, and reducing the land take in the urban context. Instead, the second and third objectives aim to satisfy only one of the non-monetary impacts, i.e., the social dimension for the second objective and the cultural dimension for the third objective, respectively. Accompanying towards autonomy is specifically addressed to fragile people, creating social networks and supportive relationships, and avoiding marginalization. The realization of a territorial social aggregation center makes possible the development of opportunities for cultural growth, awareness, and promotion.

Table 1. Objectives – impacts matrix (elaborated from Mion, 2021)

OBJECTIVES		**IMPACT TYPOLOGIES**				
		MONETARY		NON-MONETARY		
General objectives	**Detailed objectives**	F	M	S	C	E
Building a temporary housing	A temporary residence for gray band population A temporary residence for people with a state of housing deprivation A temporary residence for off-site students with low-cost expenses A temporary residence for people with occasional work					
Accompanying towards autonomy	Accompanying paths towards housing autonomy Accompanying paths to work					
Creation of a territorial social aggregation center	Meeting points for the inhabitants of the neighborhood Services for guests and citizens with a view to sharing economy Raising population awareness about the housing problems in the city to counter prejudice					

Table 2. Final evaluation matrix with the co-axial matrix (elaborated from Mion, 2021)

	ACTORS	IMPACTS F	M	S	C	E	OVERALL IMPACTS
PRIVATE	Association "Insieme per accogliere"						
	Association "Provincia Italiana dei Missionari di Nostra Signora delle Salette"						
	Association "Caritas" of Turin						
	Social cooperative "Synergica"						
	Design studio "Peirolo"						
	Financial advisor						
	Foundation CRT						
	Foundation Magnetto						
	Foundation Compagnia di San Paolo						
	Foundation "Office Pio"						
	Pastoral care of migrants						
	University pastoral care						
	Counseling office "Due Tuniche"						
	Polythecnic of Turin						
	Company "Leonardo"						
	Company "Thales Alenia Space"						
PUBLIC	Metropolitan City of Turin						
	Metropolitan City of Turin – Social housing sector						
	Metropolitan City of Turin – Social services						
	Metropolitan City of Turin – Circoscrizione IV						
	High school "Carlo Cattaneo"						
	Institute "Carlo Levi"						
CIVIL SOCIETY	Voluntary association and third sector realities						
	People experiencing housing stress						
	People in housing emergency						
	City users						
	University students						
	Neighborhood inhabitants						
	OBJECTIVES						
	Building a temporary housing						
	Accompanying towards autonomy						
	Creation of a territorial social aggregation center						

Legend

- Very negative
- Negative
- Average negative
- Neutral
- Average positive
- Positive
- Very positive

5 Discussion and Conclusions

The aim of the present paper is to evaluate the multidimensional impacts provided by the Ma.Ri. House on both the key-players and the keep-informed stakeholders. Table 1 summarizes the CIE matrix with the co-axial matrix. The upper part of Table 2 addresses the different multidimensional impacts with their connections with the involved stakeholders. This part also highlights the nature of the overall impacts on the engaged stakeholders, according to the combination of the considered impacts. As an example, the overall impacts on the social cooperative "Synergica" are positive, due to the combination of negative financial impacts with positive and very positive social, cultural, and environmental impacts. Therefore, the performed analysis shows that the Ma.Ri. House should generate overall positive impacts on all the considered stakeholders, private, public, and civil society, considering all the impact clusters (monetary and non-monetary) and sub-clusters (economic, social, environmental, and cultural). As an example, the City of Turin, within its technical offices and the nearby high schools, should be engaged by multidimensional positive impacts, related to social, cultural, and environmental dimensions.

The lower part of Table 2 illustrates the impacts chain that connects the project objectives with all the considered impacts. More in detail, this chain represents the crossing between the different categories of impacts and the initial objectives of the Ma.Ri. House project. It aims at estimating both the nature and intensity of the impacts among the considered dimensions. Specifically, this part is helpful to understand how the different aspects of the project can interfere with the values of each stakeholder. It is possible to state that the most positive impacts concern the social, cultural, and environmental dimensions, according to the three project objectives (Table 2). Therefore, through this evaluation, it is possible to assess the Ma.Ri. House project within its complexity and multidimensionality, focusing on the nature and the degree of the generated impacts.

Moreover, beyond the results obtained by the performed evaluation, this paper generally investigates the role of evaluation tools in assessing the multidimensional impacts on the engaged stakeholders of housing intervention, with the perspective of achieving social sustainability, according to the objective stated by SDGs. Furthermore, this application illustrates the usefulness of the mixed and combined method in the *ex-ante* phase. In fact, the paper proposes a mixed-method based on the combination of SWOT, SA, and CIE. More in detail, the SWOT and the SA firstly permit the investigation of both the general and specific aspects of the intervention area according to its strengths and weaknesses, as well as the involved stakeholders within their resources and objectives. Secondly, CIE allows to evaluate the projects according to its multidimensionality, focusing on the several impacts that should be achieved by the projects according to both their degree and nature (positive or negative; monetary and non-monetary).

Moreover, this application demonstrates that the proposed mixed-method can also be performed and repeated for the monitoring phase of project impacts, in order to check if the initial actions are able to achieve the expected targets, or if it is necessary to intervene and correct some actions.

Furthermore, this application highlights the ability of the CIE evaluation to assess and manage complex decision problems through the assessment of a multidimensional set of impacts in relation to the involved stakeholders. This kind of evaluation contributes

to supporting community engagement and the evaluation of the real needs of citizens, according to the main objective of creating sustainable cities and communities. However, the qualitative approach of CIE in assessing a policy, project, plan, or program can be, in some cases, a weakness. This is particularly true when referring to monetary benefits that can be easily assessed with other methods on a quantitative scale.

Considering this con of CIE, a future perspective of the proposed mixed-method could regard the integration of quantitative assessments and the evaluation of the financial impacts, supported, for example, by the Discount Cash Flow Analysis.

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