Using quality indicators to assess urban regeneration in residential areas

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Abstract:

Urban regeneration programs play a dominant role in improving declined areas and inject new life into cities, neighborhoods and urban centers. They can be long term and costly projects and therefore evaluating them is a key issue for both urban policy makers and academic scholars. Although urban regeneration efforts have many similarities, they differ significantly in terms of their outcomes and the level of success across neighborhoods and regions. Detecting a successful regeneration depends on the set of factors such as the development potential of the location, the socio- economic context of the area and the commitment of all involved actors and authorities. Hence, to measure the success of such a complicated process it is necessary to consider all these factors and also the consequences of the implementation on residents' life.

In this article, the chief argument is to explore the main approaches in evaluating urban regeneration programs and then to propose a model to assess the implemented interventions in residential areas. The model contains a method, which quantifies different aspects of a regeneration program through sets of measurable indicators. It also addresses a survey from the residents, asking them to compare and evaluate their quality of life before and after the regeneration. In this method, measurable indicators are translated into survey questions and connected to physical aspects of the environment
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Keywords: Urban regeneration, planning, evaluation method

1. Introduction

Urban spaces are diverse and dynamic places where different activities and events take place. The diversities and changing characteristic of urban places have always been influenced by macro developments, such as globalization and economic situations and, as a consequence, new visions and methods are needed to manage these multi – scale issues in the existing urban environments. Urban regeneration programs are the tools to face diversities, inequalities and major challenges in urban areas across the world. In the last two decades, many towns and regions have been involved with regeneration programs to eliminate deprivation and improve the individual spaces as well as the collective ones (Roberts & Sykes, 2000). The primary goal of these programs has been mostly economic, but in recent years it has shifted toward concepts such as vitality and human development.

Urban regeneration processes have been regarded as a key element of urban policy to promoting land values and environmental qualities (Adams & Hastings, 2001). It contains various approaches to tackle economic, social and physical issues of urban centers and therefore involves different planning

actions and stakeholders (Couch, Sykes & Boerstinghaus, 2011).

In recent decades, many of implemented actions regarding regeneration program emphasize on human development rather than economic growth of the regions. Thus, the reflections of the link between regeneration and these aspects bring out new questions whether the components of regeneration activities have been characterized with respect to human development indicators (Wei *et al.*, 2015). It is therefore crucial for planners to develop an evaluative tool to monitor the effectiveness of regeneration programs. This tool contains indicators, which demonstrate the regeneration initiatives for resident's interests.

Urban regeneration requires time consuming approach, dealing with various urban problems related to the built environment, such as urban decline, unbalanced urban growth etc. Therefore, its intervention in urban space is through sets of physical, social, economic and environmental domains. In this regard, this study aims to develop a model to evaluate the outcome of urban regeneration and empirically test whether those projects were successful in terms of enhancing indicators of resident's life quality. These indicators will be measured using objective and subjective methods in the context of neighbourhood. The findings will allow us to have a better understanding of urban development projects and the real impacts of physical interventions on residents. This can lead to improved design guidelines for the practitioners and will bring insights to both theory and practice of urban regeneration.

2. Background

From the earliest human settlements to modern globalized cities, urban regeneration has played a vital role in the world history. The concept of urban regeneration has gained a lot of attention especially after the Second World War due to the large damages and became part of urban policies. Cities have been rebuilt in response to the problems of economic decline, environmental demolition and social dereliction (e.g. Hulsbergen & Stouten, 2001; Stouten, 2010). It is possible to classify different strategies under the flag of urban regeneration depending on the implementation scale, time interval and location of the project. These strategies are known as urban revitalization, urban renewal and urban development (Dempsey *et al.,* 2011). All of these strategies make a direct link to the communities living in the areas where regeneration is planned. As a consequence community and its demands are an integral part of any urban regeneration program. Urban regeneration is multi-dimensional action, which contains different aspects of human life, and it should help the cities to become viable, vibrant and sustainable communities.

Although urban regeneration efforts have many similarities but they differ significantly in terms of their outcomes and the level of success across neighbourhoods in response to unique historical, social and economic realities of the area (Evans & Jones, 2011) Detecting a successful regeneration depends on the set of factors such as the development potential of the location, the attitude of the local authorities and the commitment of all involved actors. Hence, to measure the success of such a complicated process it is necessary to pay attention to all those factors and also the fact that urban regeneration involves in injection of new life into cities, neighbourhoods and urban centres. Since urban regeneration is multi - conditional and context related process, evaluation of urban regeneration projects should place emphasise on both the outcomes and the planning process. In summary, Roberts & Sykes (2000) explain urban regeneration in the Handbook of urban regeneration as: "Comprehensive an integrated vision and action which leads to the resolution of urban problems and which seeks to bring about lasting improvements in the economic, physical, social and environmental condition of an area that has been subject to change".

As figure 1 represents, urban regeneration performance at different scales from macro to micro aims to improve different indicators of social, environmental and physical aspects of urban system.

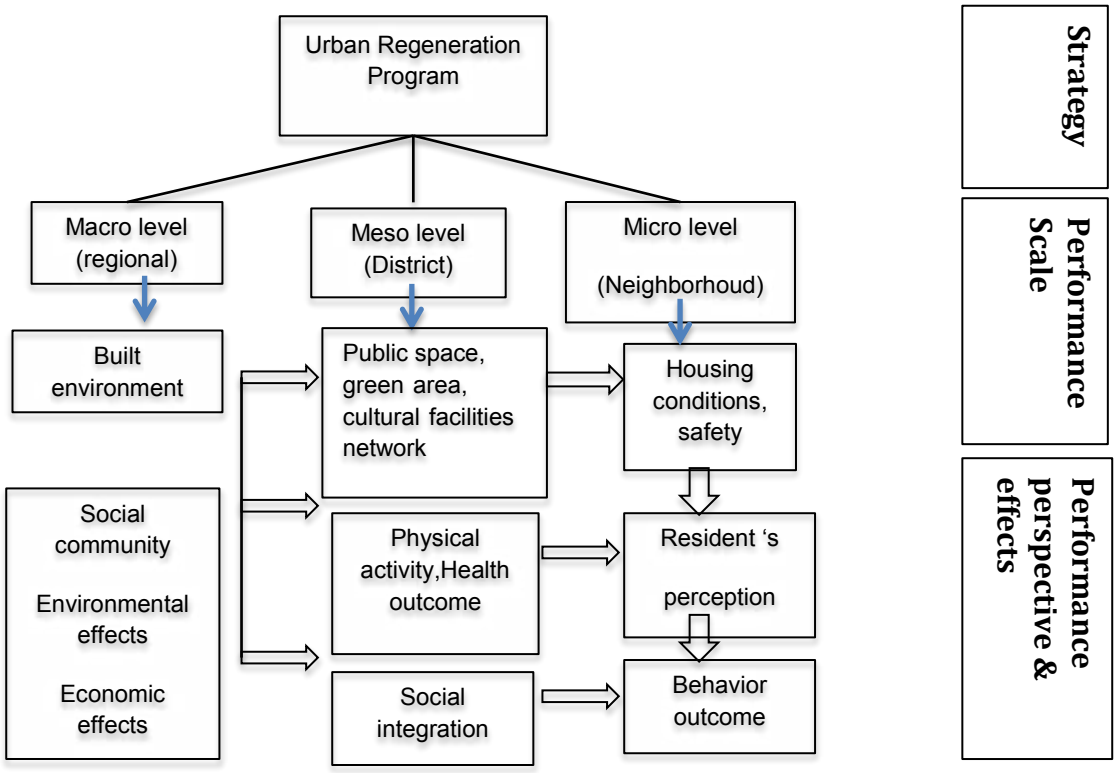


Figure 1. Regeneration performance scale

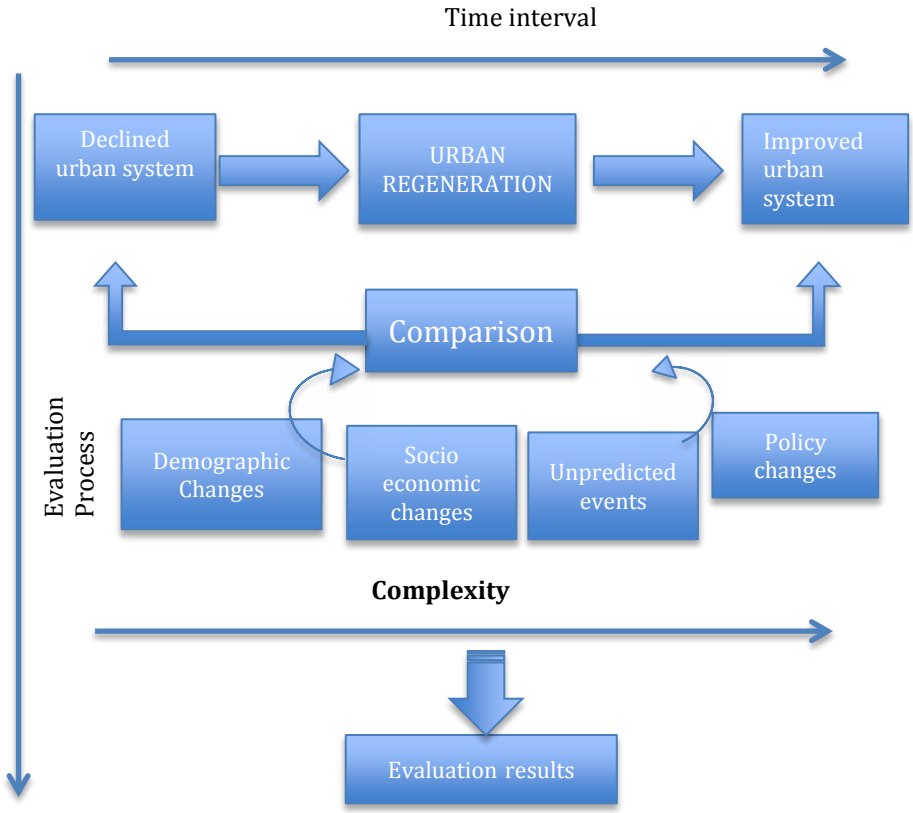
3. Evaluation of urban regeneration

There is consensus among authors and urban scholars that evaluating urban regeneration is necessary and enables planners and designers to see the areas of weakness and strength, thereby preventing them to repeat the same mistakes in future plans (Boyko *et al*., 2012; Cahantimur *et al*., 2010; Cheng & Lin, 2011). Assessment of urban regeneration is complex and according to Tyler (2001) there is no accepted method among researchers to evaluate and monitor the outcome of urban regeneration operations since they contains both short terms and long terms effects (figure 2). Due to temporal effects on the interventions, what appears successful at the beginning can lead to ineffective long-term results. In addition, changes in socio economic situation and demographic composition of area can also increase the complexity of assessment during and after the implementation. To tackle these issues, researchers propose different methods and approaches namely, Hemphill et al. (2004) developed an indicator-based approach for assessment of urban regeneration, although the use of indicators is not new and dates back to mid-1960s (Wong, 1995), they proposed indicators and weighting system as evaluative tools for regeneration activities and interventions. This method can employ different sets of indicators or frameworks, and includes both qualitative discussion and quantitative assessment of urban regeneration. The application of this approach is mostly on the

district levels where different indicators of land use, transportation and buildings are interrelated and measurable.

Figure 2. Complexity of urban regeneration evaluation

However, there is still ambiguity about what indicators should be used, Coombes *et al*. (1992) mentioned that indicators selection is not an easy job while the economy that provides the resources



for regeneration usually rooted far beyond the designated areas. This consequently makes indicators sensitive to locations and contextual factors. Taig (2002) suggests using of experts and people opinions as means of identifying the list of main criteria and their significance. Coombes & Wong (1994) suggest a four-step method for determination of indicators: conceptual consolidation, analytical structuring, identification of indicators and creation of an index.

Moreover, to evaluate the actual operation of urban regeneration, it's important to determine the physical changes in the area which ranges from housing renovation, public and green space development to urban fabric improvement. Each of these interventions can affect urban system and residential quality of life in different ways and to different degrees. Therefore, it is essential to identify the exact changes implemented through urban regeneration process in the neighbourhood in order to choose, collect, analysis and interpret indicators for the study. This will ensure that the most relevant indicators would be used during the study. A good Indicator must be relevant, valid, meaningful, measurable and sensitive to changes in the urban environment. Hollander (2002) also adds consistency, cost effectiveness and comparability to the criteria of indicator selection.

Although it is difficult to define and measure urban regeneration effectiveness, it is possible to conceptualize it through sets of key performance indicators such as length and cost of the program.

Example of measurable indicators for evaluating urban regeneration:

- The length of the program
- The cost of the program
- Number of buildings renovated
- Number of streets redesigned
- The amount of public spaces created
- Ratio of green space
- The number of new jobs created
- The number of bus, metro, tram added
- The number of retail business
- The value of properties

In addition to indicator-based approach, recognizing the underlying causes of regeneration process can help to monitor the outcomes and evaluate the effects of the process based on the problem-oriented approach. Figure 3 briefly shows the process of urban regeneration, from identifying the challenge to evaluating the success. It demonstrates the numerous reasons for regenerating an area, which covers physical, social, economic and environmental issues.

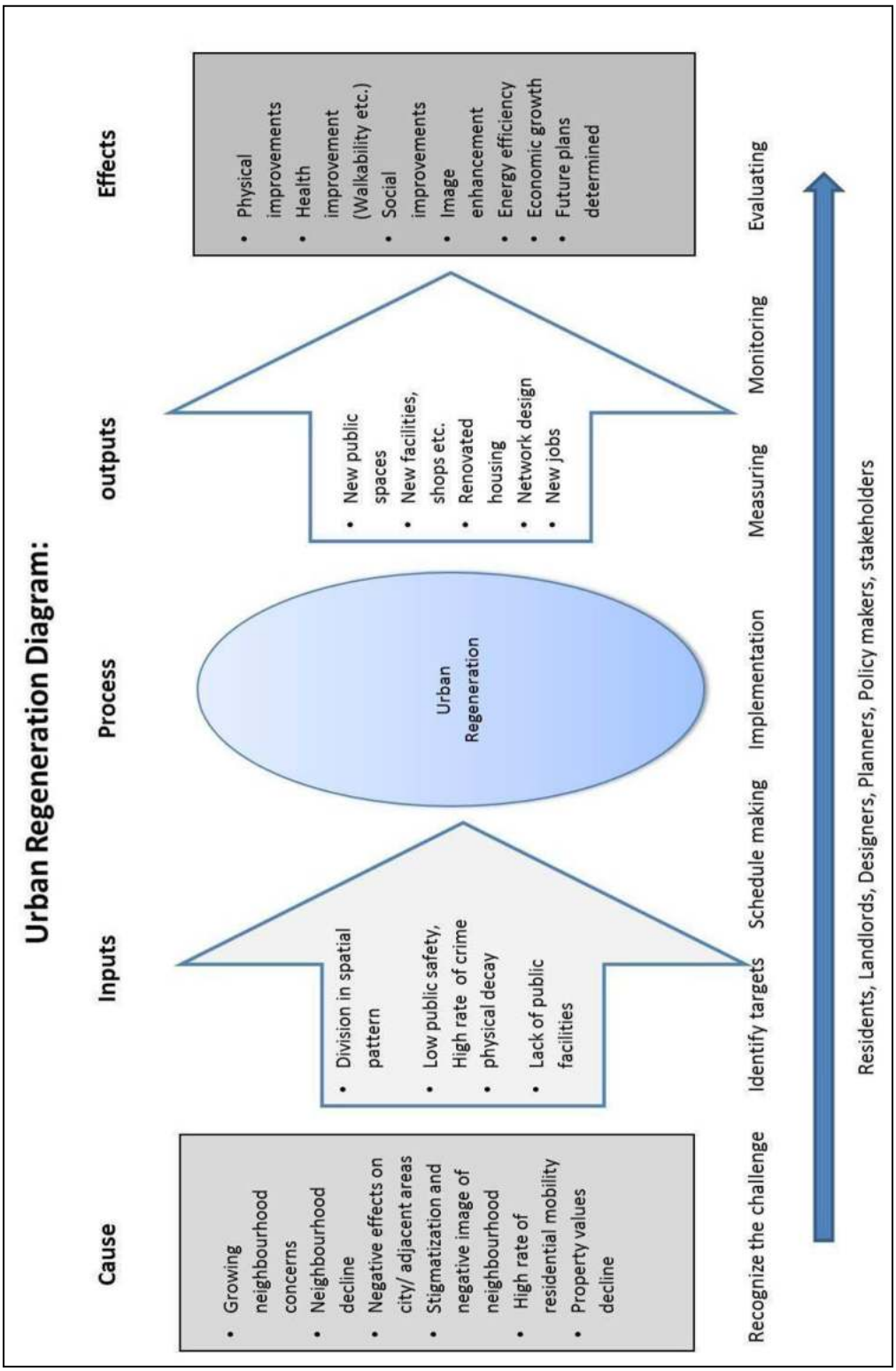


Figure 3. Urban regeneration diagram

4. Survey approach

Urban regeneration is a multi-faceted process that affects residential liveability of space and therefore survey and exploratory interviews should be an integrated part of the evaluation. Interviews with residents and stakeholders should contains:

(1) Comparison of the situation with similar size projects in the city

(2) Changes over time

(3) Future perspective and capacity of project to deal with coming issues

(4) Evaluation of projects in terms of defined sets of indicators

Collecting information for subjective assessments of residents' quality of life (QOL) has been usually conducted through social survey methods. In such survey, it has been common to ask residents to evaluate different aspects of their QOL (McCrea *et al.*, 2011). In this type of research, similar type of the questions can be asked from the residents who has seen the urban regeneration process and/or used to live in the intervention area before urban regeneration implementation. Therefore, they can compare the quality of their lives and whether it has been improved or not. The survey samples also should be spread out in a way that respondents are representative of the cultural diversity within the organization. Furthermore, statistical method will be used on the results of subjective QOL for further analysis and interpretations. These questionnaires and questions aimed to measure indicators designed in the previous step. Table 1 illustrates different indicators that might affects resident's satisfaction after regeneration implementation and can be translated into questions in survey-based approach.

Physical condition	**Social condition, Civic behaviour**	**Economical Satisfaction**
• Landscape quality • Housing quality • Street design • Network and accessibility • Traffic-noise-pollution • Air and water quality • Public facilities • Cultural amenities	• Satisfaction with people who live in the area • Social interactions • Safety/crime • Privacy • Ties with people in the community	• Living cost • Housing price • Socioeconomic status of neighbourhood (Unemployment rate, etc.) • Neighbourhood improvement

Table 1. Key performance Indicators

5. Integrative method

In recent years, assessing the effectiveness of regeneration practice has been gained a lot of attention among policy makers. Following this path, both "good" and "bad" practices need to be evaluated and deeply studied. The current financial situation and unemployment rate affect safety, housing quality and bring poor environmental conditions, which highlight the major challenges to improve quality of life through both top-down and bottom-up approaches. Increasingly, key performance indicators enable a range of measures to evaluate the achievement of regeneration through four main categories

of physical, environmental, social and economic. Figure 4 presents number of key factors to evaluate regeneration policy and practice.

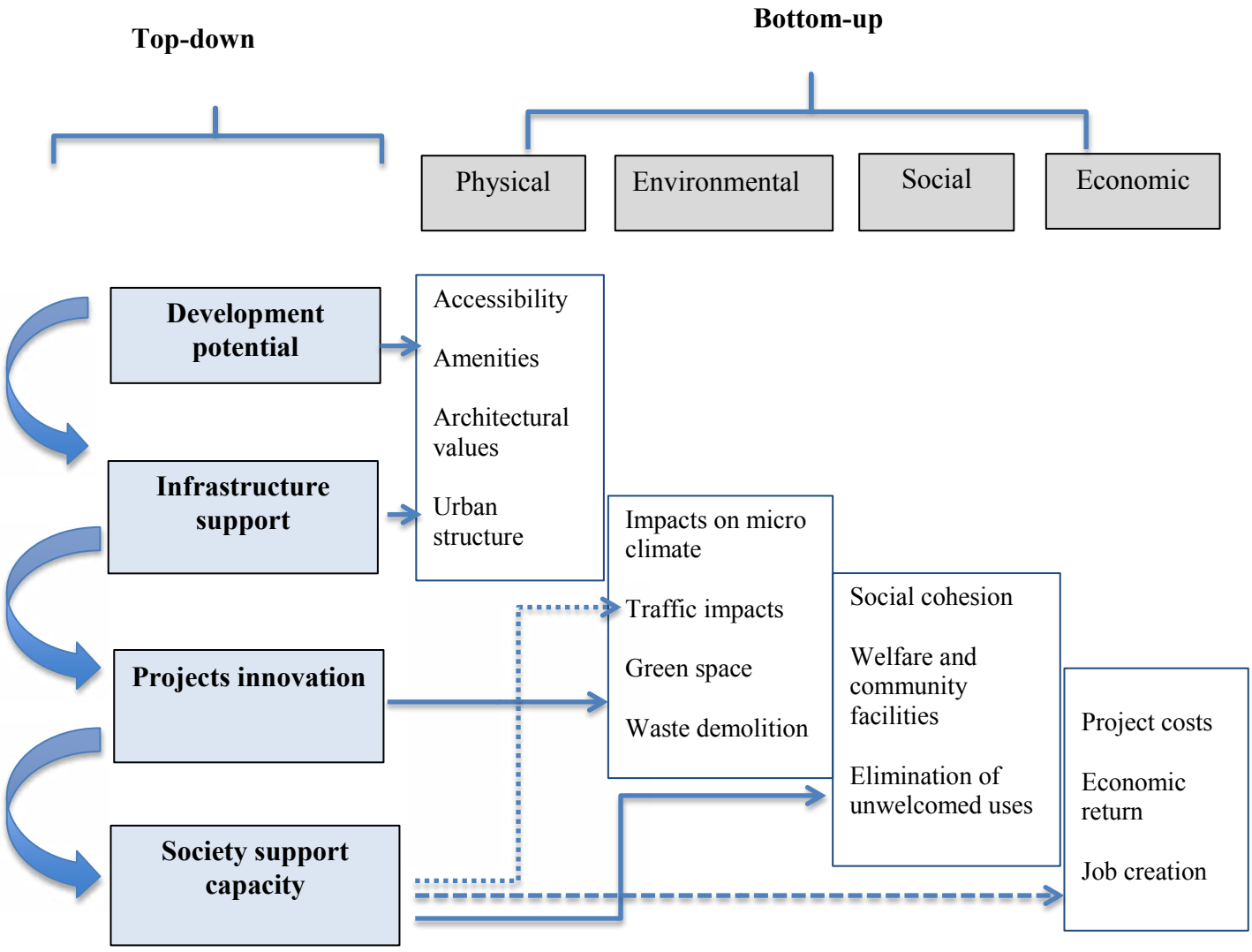


Figure 4. Key factors to evaluate regeneration process

6. Discussion

The above study provides insights into the complexity of urban regeneration process and discusses different approaches to assess regeneration policy and practice. In general, it is to say that four main factors play dominant role in the success of regeneration program; the development potential of the area, infrastructure support, projects innovation and society support capacity.

Despite the great emphasize on evaluating regeneration projects among researchers, there is still a huge gap in this field. Considering regeneration process as a long term and costly program highlights the necessity to deeply study the role of various planning factors and reach to an agreement on what to measure, why and how to measure it.

Evaluation of urban regeneration programs contains three distinct phases; Monitoring the current performance capabilities, assessing the future potentials and proposing corresponding solutions. Therefore, future-based approaches are also applicable to assess these programs and enrich their functionality in remarkable ways. Future scenarios can bring in depth insights for decision makers and protect the investments on existing and potential plans. In summary, to gain a better understanding of the urban regeneration mechanism, it is necessary to study every single element that contributes to the process and also interrelated to other elements.

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