

# Multi-Stakeholder Spatial Decision Analysis (M-SSDA) for a Culture-Led Regeneration Strategy

Raffaella Amistà and Maria Cerreta<sup>(⊠)</sup>

Department of Architecture, University of Naples Federico II, via Toledo 402, 80134 Naples, Italy raffaella.amista@gmail.com, maria.cerreta@unina.it

**Abstract.** The paper presents the elaboration of a culture-led regeneration strategy that is structured through a multi-dimensional and multi-stakeholder decision-making process for the Quartieri Spagnoli (QS), a historic district of the city of Naples (Italy). Beginning with an evaluative approach specific to the deliberative methods, a Multi-Stakeholder Spatial Decision Analysis (M-SSDA) was established. It consisted of three main phases: knowledge, elaboration and evaluation. In the first two phases, the economic, social and urban dynamics that characterise the district have been identified and explored through the selection of some spatial indicators represented with a Geographic Information System (GIS), and three possible alternative scenarios of urban regeneration have been elaborated. In the evaluation phase, a multi-criteria and multi-group assessment of the scenarios was carried out through the Analytic Network Process (ANP) method, and weights were assigned to the spatial indicators using the Weighted Linear Combination method. The result of the decision-making process makes it possible to identify the preferable culture-led regeneration scenario and to draw up a strategic map that identifies potential actions for the scenario implementation. The decision-making process, in its different phases and results, allows making explicit the components that significantly influence the local transformations and that could guide the interaction between the different involved stakeholders towards a shared common vision.

Keywords: Culture-led regeneration · M-SSDA · Analytic Network Process

# 1 Introduction

For about forty years, the debate on the theme of urban regeneration, arising from the socio-economic transformations of the modern post-industrial society, led to the formulation of new urban paradigms. It highlighted how the idea of urban regeneration encompasses, on the one hand, the perception of a decline of the city, on the other, the awareness of the possibility of triggering a process of recovery and revitalisation, intervening both on the economic base and on the social system [1].

According to Evans, [2] urban regeneration can be understood as the transformation of residential, commercial or open spaces in conditions of physical, social and economic decline, bringing new life through sustainable changes that are able to contribute

<sup>©</sup> Springer International Publishing AG, part of Springer Nature 2018 O. Gervasi et al. (Eds.): ICCSA 2018, LNCS 10962, pp. 84–99, 2018. https://doi.org/10.1007/978-3-319-95168-3\_6

to the quality of local life in the long-term, including responses to economic, social and environmental needs. For urban contexts, regenerating implies approaching the city through practices of reuse and refunctionalisation, with interventions in the multiple constitutive matrices, and giving a new meaning to those areas that have lost the original one over the years, following physical, social and economic transformations. Urban regeneration initiatives and related projects are part of a relatively young policy, the result of a gradual process of sensitisation towards issues – such as quality of life, environmental sustainability and economic development – that can take into account both tangible resources (such as geographical location and morphological characteristics, urban structure of the city, real estate, cultural heritage, etc.) and intangible resources (such as local identity, the system of social and civic values of citizenship, the competence of the productive and social fabric).

A central element linked to urban regeneration projects is constituted by culture, which represents the fundamental premise from which to build a shared vision, a system of values, a common language that binds a community. For decades we have looked at culture only as an immaterial good, useful to cultivate the spirit and the mind but scarcely productive on the material level [3, 4].

Culture is considered a fundamental component of the new welfare and can be the driving force of a new idea of economy and development, as demonstrated by significant experiences in Europe and in the world. Indeed, culture is today much more relevant than in the past for the organisation and functioning of modern post-industrial cities. It also generates a significant amount of economic added value [5, 6]. From design to quality of food and wine, from fashion to cultural heritage, from live shows to editorial, film, radio and television productions, the cultural and creative industries and services are experiencing a phase of strong and continuous expansion and transformation; they are increasingly an important competitive resource, both for the various production sectors and for their positive impact on the entire national economy, particularly the tourism sector.

Since the 1990s, the cultural dimension of urban regeneration has played a particularly significant role in the political context [7]. Cities that have used culture, architecture, design, events or productions based on culture are today largely celebrated and seen as examples of success not only within the regeneration processes driven by culture, but also within urban regeneration in general [8].

The reasons that have led to the inclusion of culture in urban regeneration policies also derive from the greater responsibility of local governments in the field of culture. As stated by Bianchini [9], European cultural policies are expanding – as a result of the decentralisation of cultural funds and responsibilities – from the centre to regional or local governments. We begin to recognise culture as an aspect of social welfare that is linked to population growth, with strong implications for urban regeneration. On the use of culture in urban political practice there is a vast literature. Grodach tried to summarise the most commonly used objectives and policies in five models [10]: 1. Conventional economic development; 2. Creative city; 3. Cultural industries; 4. Cultural occupations; and 5. Cultural planning model.

These models are distinguished by having, as recipients of the policies, different types of stakeholders: the local community, artists, cultural industries, public and private promoters and tourists. Overcoming this sectorialisation can represent an

evolution in the methodological approach, developing an overview that holds together different interests and needs. Developing and implementing cultural strategies capable of determining a real impact on economic development and social cohesion remains an open challenge for cities; culture is entrusted with the power to be economically and socially a source of development and inclusion.

The most widespread practices of incorporating culture into the urban regeneration processes are relatively recent, and Evans [11] summarises them in three models: Culture and regeneration, Cultural regeneration and Culture led-regeneration. In the latter, model cultural activities are seen as catalysts of regeneration, the epithet of change. The projects are often intended for the large public and cited as a symbol of urban regeneration, more specifically as a cultural 'flagship project'.

Evans emphasises, for this type of model, the need for different factors to make these projects work, among which the support of the community is a key factor [2, 8, 11]. The culture-led regeneration represents the most current and innovative reference model, which makes it possible to explain the relationships between regeneration processes and the production of social and human capital, to recognise in the culture the ability to influence specific planning actions and to identify and assess the impacts of activated processes, with particular attention to human and social dimensions. Culture becomes the instrument to link the different social, economic and urban components into a single synergistic process, involving the communities in the representation of their own identity.

The synergistic effect of the culture-led regeneration depends, therefore, on how the process manages to build a shared and inclusive social representation, where the various local communities can learn to expand their capacity for interaction, creating and sharing information and ideas to cooperate and compete together. The culture-led regeneration practices focus on revaluating those cultural resources that represent uniqueness, social vitality and the identity of places as tools for local sustainability and cohesion [11–15].

Considering the above reflections, the paper proposes the elaboration of a strategy of culture-led regeneration structured through a multidimensional and multi-dimensional decision-making process for the Spanish Quarters/Quartieri Spagnoli (QS), a historic district of the city of Naples (Italy).

Starting from an evaluative approach consistent with the evaluation deliberative methods, a Multi-Stakeholder Spatial Decision Analysis (M-SSDA) was built, consisting of three main phases: knowledge, elaboration and evaluation.

In the first two phases, the economic, social and urban dynamics characterising the historic district have been identified and explored; this has been accomplished by selecting some spatial indicators represented by a Geographical Information System (GIS), and three alternative regeneration scenarios have been elaborated.

In the evaluation phase, a multi-criteria and multi-group assessment of the scenarios was carried out using the Analytic Network Process (ANP) method, and weights were assigned to the spatial indicators using the Weighted Linear Combination method.

The result of the decision-making process makes it possible to identify the preferable culture-led urban regeneration scenario and elaborate a strategic map that locates potential actions for the scenario implementation. The decision-making process, in its different phases and results, makes it possible to identify components that

significantly influence the local transformations; these components could also guide the interaction between the different stakeholders involved towards a shared common vision.

The paper attempts to respond to the above issues through the following structure: the first part (Sect. 2) identifies the case study; the second one (Sect. 3) explains the methodological approach, analysing the materials and methods and describing the different steps, and the last one (Sect. 4) shows discussion and conclusions regarding the entire process.

# 2 The Case Study: The Spanish Quarters in Naples (Italy)

The Spanish Quarters/Quartieri Spagnoli (QS) (Fig. 1) rose in the historical part of Naples (Italy). They were built around 1536 by the viceroy Don Pedro of Toledo in order to receive the Spanish military garrisons and are constituted, in turn, of the districts of San Ferdinando, Avvocata and Montecalvario.

Whether we consider the restricted historical area or more extensive one, the QS today does not represent a single administrative reality. In fact, there are two Municipalities: Municipality 1 (Chiaia-Posillipo-San Ferdinando) and Municipality 2 (Avvocata-Montecalvario-San Giuseppe-Porto-Mercato-Pendino).



Fig. 1. The study area: the Spanish Quarter in Naples (Italy)

The area of QS consists of a dense mesh of orthogonal roads. The over 170 blocks have buildings with four or five floors above ground. In the lower floors, there are the so-called 'bassi', those that were once homes or artisan workshops; today, they are mostly inhabited by families of recent immigration from Sri Lanka, Pakistan, Latin America, or families of Neapolitans. These are marked by a strong discomfort or are replaced by boxes for cars and motorcycles, bars and restaurants, particularly close the via Toledo, following the growing tourist demand in recent years.

The original conformation, typical of a military quarter, is of a closed enclave separated from the city, which has always conserved, albeit its geographical centrality, an isolation not only physical but also social. Accessibility is characterised by a relevant porosity on the lower side (via Toledo), towards the historical centre. Instead, this

porosity is limited by the upper side (Corso Vittorio Emanuele), where the only accesses are the Stairs of Montesanto (still closed and in the testing phase), the Stairs of San Pasquale and the climb through Trinità delle Monache. This area stands out for its strong identity; it is also characterised by economic hardship, degradation of a large part of the existing buildings and a persistent risk of social exclusion of its inhabitants. School dropout is a real problem and felt in the QS, to which many local projects have been dedicated; moreover, the criminal situation has undergone significant changes over the last 20–30 years, and the QS has been the territory of organised crime clashes. The profound and multiple transformations that characterise the QS in relation with the social, economic and environmental dynamics place the need to develop a strategy of urban regeneration that allows protection of the district's identity, valuing the new opportunities that are taking shape, in a balance between conservation and transformation in which culture can be a values driven component.

# 3 The Multi-Stakeholder Spatial Decision Analysis (M-SSDA)

The ongoing transformations in the QS have been explored by carrying out analyses over a reference timeframe of 30 years, a period that includes three decades to compare and highlight what has changed and what persists over time. These analyses were the premise for developing a knowledge process and identifying those corrective or improvement actions that should be introduced to guide the ongoing transformations, so that they contribute to regenerating the urban fabric preserving the cultural identity that characterises the QS, starting from the recognition of shared values.

Literature contains a wide range of monetary and non-monetary techniques that can elicit different types of shared values at various levels [12], including the Deliberative Monetary Assessment (VDM), Deliberative Multi-Criterion Analysis, citizens' juries, deliberative forums and surveys, in-depth discussion groups, GIS mapping and participatory mapping and interpretative techniques such as media analysis and psychometric approaches [16]. The deliberative processes, activated according to a collaborative approach, provide the evaluator with the time to understand the asset or the system of assets under investigation, as well as the time to reflect and construct, or potentially modify, his analyses [17], through a transformative process of deliberation and learning [12, 18].

In the case of QS, a hybrid methodological approach has been elaborated [19, 20], combining techniques and tools in a Multi-Stakeholder Spatial Decision Analysis, articulated into three phases: knowledge process, development process and evaluation process (Fig. 2). In phase 1, related to the knowledge process, significant data were selected for analysing the context using a multi-methodological approach that identifies both hard and soft data through four survey criteria: cultural, social, economic and urban.

In particular, for the hard data, significant indicators were selected for the four identified criteria. For the soft data, we began with the institutional analysis [13], and a map of the significant stakeholders [21] was elaborated; later, we moved on to data collection (online questionnaires, semi-structured interviews, storytelling) and their processing through tools such as semantic analysis, Social Network Analysis and collaborative mapping of transformations.

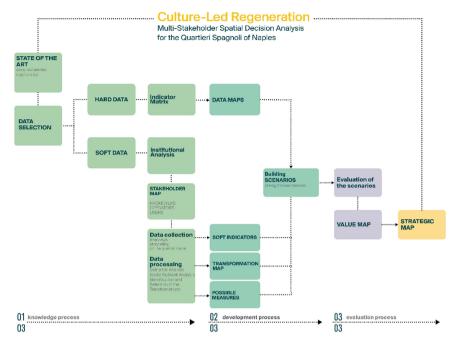


Fig. 2. M-SSDA – methodology

In phase 2, the outputs obtained from the processing of hard and soft data made it possible to identify a first summary of the information, which was useful for understanding how the area of QS has changed over time. The result of this processing is divided into:

- information maps, i.e. the spatial representation of the selected indicators;
- subjective indicators obtained from the processing of soft data based on the four survey criteria;
- transformations map, in which the transformation actions have been identified and selected; both were activated with a bottom-up and top-down approach; and
- checklist of potential actions to start a culture-led strategy.

Beginning with this set of outputs, it was possible to elaborate the significant alternative scenarios for the activation of a process of urban regeneration focused on culture and its multiple components.

Finally, in phase 3, the evaluation process was developed. Having obtained three scenario alternatives from the previous phases, we have passed to their evaluation – both in multi-group and multi-criteria terms – through the application of the Analytic Network Process (ANP) method [22, 23].

From the scenario evaluation process, the preferred one was obtained, and the weights to be attributed to the spatial indicators were assigned through the Weighted Linear Combination (WLC) method [24].

Spatially representing the results has allowed us to elaborate a 'map of values' of the QS, useful for identifying the suitable areas and the sensitive spaces for implementing the preferable scenario. The map of values is also the basis for the elaboration of a strategic map, in which the synergic actions that could make the culture-led regeneration process operative are identified and localised.

# 3.1 Analysis of Transformation Processes

The knowledge framework was constructed through the processing of hard and soft data in order to investigate and understand the transformation processes in the context of QS, interpreted through four criteria: cultural, social, economic and urban.

For hard data, the matrix of indicators has been elaborated from the selection of the indicators, which were classified according to the survey criteria (Fig. 3), identifying each of them respectively: Criterion; Indicator name; Unit of measure; Territorial dimension; Source; Reference year.

Considering the neighbourhood scale, in some cases, the institutional data returned an aggregate datum, at least spatially, and a limited time interval, to describe the transformation dynamics that have occurred in the last decade. Based on these considerations, we proceeded to develop an additional mapping, with the support of the open source data of Google maps.

From the matrix, we moved to the spatial representation of the selected indicators, through the processing of the information maps, which take into account the territorial specificity of each selected data. For example, data that describe the real estate dynamics were reported on the spatial information of the census sections provided by Istat [25], to give a common basis to the different maps.

The obtained maps allow us to describe the geography and density of the relations that are concentrated in some areas of the QS. Subsequently, through the institutional analysis – aimed at identifying a group of stakeholders significant for the context being examined – the map of the stakeholders was elaborated and articulated considering the following categories: Promoters (institutions of the Municipality of Naples); Operators (associations, economic activities); and Users (inhabitants, tourists, visitors, both actual and potential).

The aim was to identify the perceived critical issues and potentialities, from which to start the strategic actions elaboration. While exploring the same issues, the survey presents some differences in the set of questions. Indeed, for the promoters and the operators, a semi-structured interview and a storytelling was envisaged to understand the sense of belonging and the interaction with the social and urban context; it was also used to understand the identity values and the willingness to cooperate with the other stakeholders.

For users, an online questionnaire has been developed, both to identify and classify them and to understand the perception they have of QS, on an experiential or potential-experiential basis. A total of 12 semi-structured interviews were conducted for operators and promoters, and 268 online questionnaires were provided to users.

The processing of soft data, for semi-structured interviews, was carried out through a semantic analysis [26]; it was structured beginning with the classification of information (who they are/what they think of the QS/what they do for the QS/willingness to make network/proposals and input).

CRITERIA	INDICATOR	UNIT OF MEASUREMENT	TERRITORIAL COVERAGE	SOURCE	REPORTING YEAR
Economic	Market Value - Housing	Euro/mq	Sub-area OMI B15	ОМІ	2014, 2015, 2016
	Rental Value - Housing	Euro/mq	Sub-area OMI B15	ОМІ	2014, 2015, 2016
	Market Value - Shops	Euro/mq	Sub-area OMI B15	ОМІ	2014, 2015, 2016
	Rental Value - Shops	Euro/mq	Sub-area OMI B15	ОМІ	2014, 2015, 2016
	V.M.U. Housing	Euro/mq	Cadastral Section	BIN	2007, 2010, 2013, 2016
	V.L.U. Housing	Euro/mq	Cadastral Section	BIN	2007, 2010, 2013, 2016
	V.M.U. Shops	Euro/mq	Cadastral Section	BIN	2007, 2010, 2013, 2016
	V.L.U. Shops	Euro/mq	Cadastral Section	BIN	2007, 2010, 2013, 2016
	Economic activities	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Economic activities	Number	District	Google Maps	2017
	Restaurants	Number	District	Google Maps	2017
	B&B Hotels	Number	District	• .	2017
	DGD FIOLEIS	Number	DISTRICT	Google Maps	2011
Social	Residents TOTAL	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Residents 0-9 age	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Residents 10-19 age	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Residents 20-34 age	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Residents 30-49 age	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Residents 50-64 age	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Residents > 65 age	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Residents - Laurea	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Residents - Diploma	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Residents - Licenza Media/ Elementare	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Single person households	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	2 - 5 persons households	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	+ 6 persons households	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Foreign residents-Europe	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Foreign residents-Africa	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Foreign residents-America	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Foreign residents-Asia	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Foreign residents-Oceania	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Foreign residents-Total	Number	Cadastral Section	ISTAT	1991, 2001, 2011
Cultural	Cultural and social associations	Number	District	Google Maps	2017
	Theaters	Number	District	Google Maps	2017
	Museums	Number	District	Google Maps	2017
	Religious buildings	Number	District	Google Maps	2017
	Historical buildings	Number	District	Google Maps	2017
	School buildings	Number	District	Google Maps	2017
Urban	Unoccupied buildings	Number	Cadastral Section	ISTAT	1991, 2001, 2011
	Institutions	Number	District	Google Maps	2017
	Stations	Number	District	Google Maps	2017
	Transformations	Number	District	Google Maps	2017

Fig. 3. Matrix of indicators for the economic, social, cultural and urban criteria

From the analysis of the interviews, we obtained the necessary data to conduct a Social Network Analysis (SNA) [26], which was required in order to identify the existing network of relationships. Through the open source software Gephi [27] – to support the analysis and visualisation of social networks – describing the relationships between the various interviewed actors was possible.

Finally, based on the information provided by the analysis of the interviews, the transformations underway/occurred in the QS have been identified and selected. The spatialised result is a map of transformations that identifies transformation actions activated by both bottom-up and top-down processes. From the online questionnaire, the subjective indicators for the four survey criteria were elaborated, obtaining the level of perception for the following aspects:

- Cultural: Identity and creativity; Cultural activities and events;

- Social: Welcome; Social life;

- Economic: Gastronomy; Cost of living; and

- Urban: Decor; Safety.

The different information gathered and processed allowed us to identify the significant components, which should characterise the regeneration process and select the actions to be included in the alternative scenarios.

#### 3.2 Construction of Scenarios

From the cognitive framework provided by the elaboration of the hard and soft data sets, proceeding with the construction of alternative scenarios was possible.

During this phase emerged the critical aspects and potentialities inherent in the context of study that allowed the construction of potential actions, which were intended as triggers of the regeneration process to open new perspectives of action. They work in adjoining areas, dealing with developing cultural and social cohesion, emerge from the needs of the place and can generate, if supported, useful links for a strategy of culture-led urban regeneration [28].

The emerged potential actions have been elaborated, taking into account the selected categories of criteria (cultural, social, economic and urban); they are explained in a thematic checklist (Fig. 4):

- To aggregate people of all ages, social extraction and culture;
- To build a network of citizens and visitors;
- To generate projects to encourage creativity, to welcome and accompany, to be a reference for the territory and to facilitate the meeting between ideas and projects;
- To encourage multicultural integration for an increase in sociability and to build meaningful relationships;
- To promote culture to enable cultural production and make it accessible for everyone;
- To promote the sharing of knowledge and competence;
- To promote and communicate to tell, be told and make known the reality of the QS;
- To create new jobs that are an incentive and a source of economic and social growth; and
- To re-use spaces and places to give new value and restore the sense of belonging to the unused urban heritage.

The appropriate combination of the various identified actions makes it possible to clarify three main scenarios: Scenario 1. Cultural, Creative Community Hub; Scenario 2. Natural Commercial Centre; and Scenario 3. Virtual and Virtuous Network.



Fig. 4. Thematic checklist of the potential actions

# 3.3 Multi-criteria and Multi-groups Evaluation

The information elaborated in the previous phases was organised into an evaluation matrix consisting of the following categories: objective, criteria, indicators and alternative scenarios. The multi-criteria and multi-group evaluation was elaborated by implementing the Analytic Network Process (ANP) method [22, 23], with the support of the Super Decision software: the scenarios are compared in pairs in respect to the clusters (criteria) containing the nodes (indicators), which were selected in the first phase of knowledge (Fig. 5).

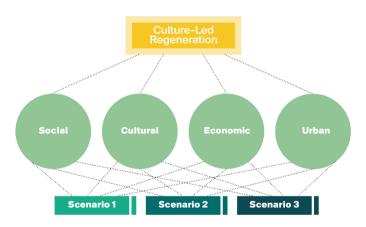


Fig. 5. Analytic Network Process model

We obtain two results from the evaluation process: the preferable scenario and the weights to be assigned to the spatial indicators through the Weighted Linear Combination method (WLC) [24].

The evaluation identifies the scenario as 1. Cultural, Creative Community Hub as preferable with a percentage 39.4%, followed by scenario 2. Natural Commercial Centre with a percentage of 31.1% and scenario 3. Virtual and Virtuous Network with a percentage of 29.5% (Fig. 6).

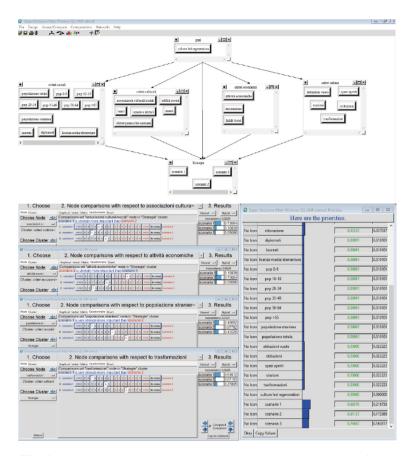


Fig. 6. Analytic Network Process supported by the Super Decision software

With the support of the GIS, the values obtained from the evaluation phase have been spatialised, thus identifying the most suitable areas to accommodate the culture-led regeneration strategy. The output obtained from this process is a map of values [28–31]. This map identifies, thanks to a semaphoric scale, the potential areas (in green) and the critical areas (in red) that are useful for the construction of a valorisation strategy that responds to the goal of the culture-led regeneration.

## 3.4 The Strategic Map for a Culture-Led Regeneration Process

The strategic map (Fig. 8), elaborated starting from the map of values, localises the potential actions for the implementation of the preferable scenario for each area; it represents a synthesis of the transformation hypothesis emerged from the soft investigation, which, concurrently, takes into account the potential and critical of local resources related to the spatial indicators, which are obtained from hard data processing (Fig. 7).

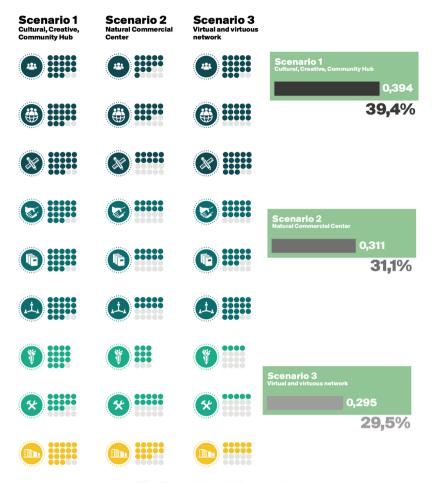


Fig. 7. Ranking of the scenarios

In particular, in the activation of a Cultural, Creative and Community Hub network, the possibility of triggering virtuous processes of value building and active co-involvement of the community, integrating with existing connections and building new bonds, is recognised" [32, 33].

The spaces to be used are to be found in QS's disused heritage, represented by vacant buildings and, in some cases, abandoned churches. The identification of guided tours aims to reuse spaces, which are also represented by streets and stairs. A guided tour – as already occurring under the push of bottom-up actions as Riciclarte Miniera and the drawings of Cyop&Kaf, cultural associations and artists – can accompany those who want to cross and know the QS. Additionally, activating the InfoPoint entrance to the streets, on the side of Via Toledo, could provide the neighbourhood's inhabitants with the opportunity to speak about the reality of the QS and the activities of its hubs, promoting and creating communication with the territory and building new links with visitors and tourists.

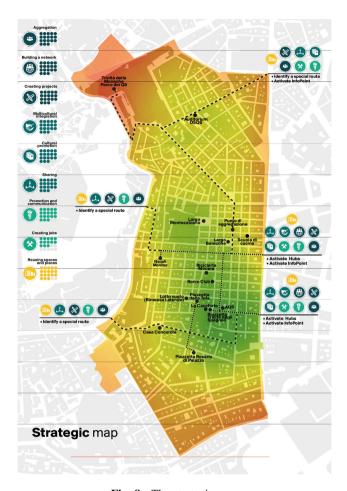


Fig. 8. The strategic map

# 4 Discussion and Conclusions

The proposed methodological path has made it possible to identify the constituent components of an ongoing transformation process, highlighting the economic, social, urban and cultural dynamics that characterise the system of tangible and intangible relations of the QS. The complexity of relationships influences transformations and, simultaneously, makes evident geographies of economic and non-economic values that characterise the change the neighbourhood is experiencing. To be able to investigate the dynamics of transformation in the QS, we have to consider the concepts of identity and community, essential elements that authentically recount the place to which they belong. This process of knowledge makes it possible to identify and analyse transformation also through shared values, understood as the result of processes of social interaction and constant dialogue [34, 35]. Through the developed methodological

process, it is possible to identify shared values [36] as constitutive elements of the vision of the place; through these, we can interact and interpret the transformations underway by developing an intervention strategy that can guide and support a process of culture-led regeneration. The concept of identity is an essential element in the interpretation of the transformations that have characterised the QS, making explicit the ways of daily life and the sense of community and belonging. Cultural identity is connected to the way in which people, inhabitants (permanent and temporary), interact with the place in which they live [37], generating multidimensional values within cooperative and collaborative processes, and putting different forces and productivity into play [38–40].

According to Bailey et al. [41], linking cultural projects to issues such as the identity of the place can lead to the involvement of local communities by cultivating their distinctive character. Likewise, Miles [42] points out that the success factors of the culture-led regeneration are based on the fact that cultural projects can influence people's sense of belonging to a place. Quinn [43] points out that local governments should consider the cultural and social contribution made by festivals and events as valid elements for revitalising an urban contest. Moreover, Miles and Paddison [44] reaffirm the importance of the commitment of local communities and the active involvement of local cultures in the culture-led processes. Therefore, the goal of the culture-led regeneration projects is to engage with the communities [45] in the short and long term, urging and supporting the local governments to focus on enhancing the existing cultural resources, an expression of the identity of a community, traditions and behaviours consolidated over time.

### References

- 1. Musco, F.: Rigenerazione urbana e sostenibilità. Franco Angeli, Milano (2009)
- 2. Evans, G., Shaw, P.: The contribution of culture to regeneration in the UK: a review of evidence. DCMS, vol. 4, London (2004)
- Ervet: Cultura&Creatività. Ricchezza per l'Emilia Romagna. Research report, Regione Emilia Romagna, Bologna, Italy (2012)
- 4. KEA: The impact of culture on creativity, a study prepared for the European Commission. Directorate-General for Education and Culture, KEA European Affairs, Brussels, Belgium (2009)
- Comunian, R.: Rethinking the creative city: the role of complexity, networks and interactions in the urban creative economy. Urban Stud. 48, 1157–1179 (2011)
- 6. Sacco, P.L., Ferilli, G., Tavano Blessi, G.: Sviluppo locale a base culturale: Quando funziona e perché? PRISMA Economia Società Lavoro 1, 9–27 (2012)
- Vickery, J.: The emergence of culture-led regeneration: a policy concept and its discontents. Research papers, vol. 9, pp. 1–105. Centre for Cultural Policy Studies. University of Warwick, UK (2007)
- 8. Evans, G.: Cultural Planning: An Urban Renaissance? Routledge, London (2001)
- Bianchini, F.: Remaking European cities: the role of cultural policies. In: Bianchini, F., Parkinson, M. (eds.) Cultural Policy and Urban Regeneration: The West European Experience, pp. 1–19. Manchester University Press, Manchester (1993)

- Grodach, C.: Cultural economy planning in creative cities: discourse and practice. Int. J. Urban Reg. Res. 37(5), 1747–1765 (2013)
- 11. Evans, G.: Measure for measure: evaluating the evidence of culture's contribution to regeneration. Urban Stud. **42**, 959–983 (2005)
- 12. Kenter, J.O., O'Brien, L., Hockley, N., Ravenscroft, N., Fazey, I., Irvine, K.N.: What are shared and social values of ecosystems? Ecol. Econ. 111, 86–99 (2015)
- 13. Woodhill, J.: Shaping behaviour: how institutions evolve. Broker 10, 4–8 (2008). http://www.thebrokeronline.eu/Articles/Shaping-behaviour
- 14. Cerreta, M., Panaro, S.: From perceived values to shared values: a Multi-Stakeholder Spatial Decision Analysis (M-SSDA) for resilient landscapes. Sustainability 9, 1–20 (2017)
- Mangialardo, A., Micelli, E.: Social capital and public policies for commons: bottom up processes in public real estate property valorization. Procedia – Soc. Behav. Sci. 223, 175– 180 (2016)
- 16. Spash, C.: Deliberative monetary valuation (DMV): issues in combining economic and political processes to value environmental change. Ecol. Econ. **63**, 690–699 (2007)
- 17. Christie, M., Hanley, N., Warren, J., Murphy, K., Wright, R., Hyde, T.: Valuing the diversity of biodiversity. Ecol. Econ. **58**(2), 304–317 (2006)
- 18. Garcia, B.: Urban regeneration, arts programming and major events. Int. J. Cult. Policy 10 (1), 103–118 (2004)
- 19. Cerreta, M., Poli, G.: Landscape services assessment: a hybrid Multi-Criteria Spatial Decision Support System (MC-SDSS). Sustainability **9**, 1–18 (2017)
- 20. Attardi, R., Cerreta, M., Sannicandro, V., Torre, C.M.: Non-compensatory composite indicators for the evaluation of urban planning policy: the Land-Use Policy Efficiency Index (LUPEI). Eur. J. Oper. Res. **264**, 491–507 (2017)
- 21. Schmeer, K.: Stakeholder analysis guidelines. In: Policy Toolkit for Strengthening Health Sector Reform. World Bank (1999)
- Saaty, T.L.: Decision Making with Dependence and Feedback: The Analytic Network Process. RWS Publications, Pittsburgh (1996)
- Saaty, T.L.: Theory and Applications of the Analytic Network Process. RWS Publications, Pittsburgh (2005)
- 24. Malczewski, J.: On the use of weighted linear combination method in GIS: common and best practice approaches. Trans. GIS 4(1), 5–22 (2000)
- Istat Istituto Nazionale di Statistica: Dati e indicatori (2011). www.istat.it. Accessed 10 May 2017
- Wasserman, S., Faust, K.: Social Network Analysis: Methods and Applications. Cambridge University Press, Cambridge/New York (1994)
- Bastian, M., Heymann, S., Jacomy, M.: Gephi: an open source software for exploring and manipulating networks. In: International AAAI Conference on Weblogs and Social (2009). https://gephi.org/users/publications/
- Perchinunno, P., Rotondo, F., Torre, C.M.: A multivariate fuzzy analysis for the regeneration of urban poverty areas. In: Gervasi, O., Murgante, B., Laganà, A., Taniar, D., Mun, Y., Gavrilova, M.L. (eds.) ICCSA 2008. LNCS, vol. 5072, pp. 137–152. Springer, Heidelberg (2008). https://doi.org/10.1007/978-3-540-69839-5\_11
- Balena, P., Sannicandro, V., Torre, C.M.: Spatial multicrierial evaluation of soil consumption as a tool for SEA. In: Murgante, B., et al. (eds.) ICCSA 2014. LNCS, vol. 8581, pp. 446–458. Springer, Cham (2014). https://doi.org/10.1007/978-3-319-09150-1\_32
- Bonifazi, A., Sannicandro, V., Attardi, R., Di Cugno, G., Torre, C.M.: Countryside vs city: a user-centered approach to open spatial indicators of urban sprawl. In: Gervasi, O., et al. (eds.) ICCSA 2016. LNCS, vol. 9789, pp. 161–176. Springer, Cham (2016). https://doi.org/10.1007/978-3-319-42089-9\_12

- 31. Torre, C.M., Morano, P., Tajani, F.: Saving soil for sustainable land use. Sustainability 9(3), 350, 1–32 (2017)
- 32. Cerreta, M., Izzo, F. (eds.): Naples culture, creative, community hub: values and synergies network of the historic city. Clean, Naples (2016)
- 33. Cerreta, M., Daldanise, G.: Community Branding (Co-Bra): a collaborative decision making process for urban regeneration. In: Gervasi, O., et al. (eds.) ICCSA 2017. LNCS, vol. 10406, pp. 730–746. Springer, Cham (2017). https://doi.org/10.1007/978-3-319-62398-6\_52
- 34. Stagl, S.: Valuation for sustainable development: the role of multicriteria evaluation. Q. J. Econ. Res. **73**(1), 1–10 (2004)
- Oppio, A., Bottero, M., Ferretti, V.: Designing adaptive reuse strategies for cultural heritage with choice experiments. In: Stanghellini, S., Morano, P., Bottero, M., Oppio, A. (eds.) Appraisal: From Theory to Practice. GET, pp. 303–315. Springer, Cham (2017). https://doi. org/10.1007/978-3-319-49676-4\_23
- 36. Porter, M., Kramer, M.: Creating share value: how to reinvent capitalism and unleash a wave of innovation and growth. Harvard Bus. Rev. **89**, 63–70 (2011)
- 37. Stephenson, J.: The cultural values model: an integrated approach. Landscape Urban Plann. **84**, 127–139 (2008)
- 38. Zamagni, S., Zamagni, V.: La cooperazione. Il Mulino, Bologna, Italy (2008)
- 39. Curto, R., Fregonara, E., Semeraro, P.: Listing behaviour in the Italian real estate market. Int. J. Hous. Markets Anal. 8(1–2), 97–117 (2015)
- Abastante, F., Lami, I.M., Lombardi, P.: An integrated participative spatial decision support system for smart energy urban scenarios: a financial and economic approach. Buildings 7(4), 1–14 (2017)
- 41. Bailey, C., Miles, S., Stark, P.: Culture-led urban regeneration and the revitalization of rooted identities in Newcastle, Gateshead and the North East of England. Int. J. Cult. Policy **10**(1), 47–65 (2004)
- 42. Miles, S.: Our Tyne': iconic regeneration and the revitalisation of identity in Newcastle-Gateshead. Urban Stud. **42**(5/6), 913–926 (2005)
- 43. Quinn, B.: Arts festivals and the city. Urban Stud. **42**(5/6), 927–943 (2005)
- 44. Miles, S., Paddison, R.: The rise and rise of culture-led urban regeneration. Urban Stud. **42** (5/6), 833–839 (2005)
- 45. Lin, C.-Y., Hsing, W.-C.: Culture-led urban regeneration and community mobilisation: the case of the Taipei Bao-an Temple area, Taiwan. Urban Stud. **46**(7), 1317–1342 (2009)