A Critical Reflection on Smart Governance in Italy: Definition and Challenges for a Sustainable Urban Regeneration

Chiara Garau, Ginevra Balletto and Luigi Mundula

> *Coming together is the beginning.*
> *Keeping together is progress.*
> *Working together is success.*
> Henry Ford (1863–1947).

Abstract The aim of this work is to analyze the projects carried out by public institutions in the field of smartness, in order to reflect on the most effective mechanisms of governance. To this end, the paper is organized into two main sections. The first section provides a literature analysis of theoretical frameworks as they pertain to the role of political bodies, the policies, and their impacts on local communities in relation to the governance of smart cities. The second section explores the ongoing implementation of "smart city" projects in Italy, in order to understand how cities address their development perspectives from a conceptual framework to the construction of an actual urban space, faced with divergent politics, messy social systems, and different scales of urban governance. In this framework, disparities between urban governance scales and ideologies encompassing smart cities seem linked to the relational systems that local administrations can develop between neighboring cities. The final section summarizes the authors' conclusions, giving particular attention to how networked urban systems are programmed, because they have been found to be key to strategic and transformative planning.

Keywords Smart urban governance · Governance · Urban policies · Italian smart projects · Smart cities

C. Garau (✉) · G. Balletto
Department of Civil and Environmental Engineering and Architecture (DICAAR),
University of Cagliari, Cagliari, Italy
e-mail: cgarau@unica.it

G. Balletto
e-mail: balletto@unica.it

L. Mundula
Department of Business and Economics, University of Cagliari, Cagliari, Italy
e-mail: luigimundula@unica.it

1 Introduction

The complexities that characterize today's urban dynamics make it difficult to describe, apply, or even to approach the concept of "smart cities".[1] For example, there is no agreement on what the administrative, functional, or social boundaries of a city should be. Consequently, identifying the optimum spatial unit for purposes of analysis is not always easy. Moreover, the urban context, when associated with the idea of "smartness"—a synonym for growth, sustainability, efficiency, inclusiveness, and technology—must necessarily refer to a territory that exceeds the strictly administrative boundaries of a city, because the entire location-based system is affected by changes emanating from the urban enter. In other words, urban dynamism produces a complex territorial geography, irreducible to traditional political, administrative, and hierarchical partitions, where local institutions serve as a complex network interlinked with the central city and even the nation. Since it is difficult to generalize—because of the different characteristics of individual urban contexts—the authors hypothesize that national urban policies must be integrated with good local governance in order to create smart, effective, sustainable cities. Without this integration, a long-term vision is not possible. Instead, the outcome will be weak, fragmented leadership, incapable of developing strategies and objectives in line with the European policies on smart cities (Donolo and Federico 2013; Mistretta and Garau 2013).

To this end, the European Union (EU) has for years promoted the use of several governance tools to facilitate the development of European cities into smart cities. These include policy documents and guidance (such as the Europe 2020 Strategy); specific forms of direct and indirect funding (direct-management funding is being provided in the case of Horizon 2020, and indirect EU funding includes the structural funds provided under the European Regional Development Fund [ERDF]); and policies aimed at creating partnerships between member states (such as the European Innovation Partnership on Smart Cities and Communities [EIP SCC]). In Italy, a process aimed at transforming cities into smart cities began in recent years, and national governing bodies have implemented specific governance tools that are in line with the latest European trends. In 2012, the Italian government approved a decree titled "Urgent measures for innovation and growth: The digital agenda and start-up."[2] This decree established the Digital Agenda for Europe (DAE), coordination and networking tools (the EIP SCC European initiative is

---

[1]The literature seems rather discordant in framing the "smart city" concept. Some authors define it as a paradigm (Kunzmann 2014; Lombardi et al. 2015); others as a fashionable trend of the moment (Lu et al. 2015); others simply as a label (Caragliu et al. 2011).

[2]The Italian Digital Agenda (ADI), i.e., a steering committee, and makes reference to a decree dated October 18, 2012 to further urgent measures for the growth of the country and has established a process for implementing ADE. (The Dynamics of Broadband Markets in Europe: Realizing the 2020 Digital Agenda.)

being implemented in Italy through the establishment of a Smart City National Observatory), and funding mechanisms.

These initiatives provide the scope needed to orient public action towards new local governance models, thereby enabling adaptation to urban changes and transforming the processes of urban development in an innovative way (Puppim de Oliveira et al. 2013). This innovation obviously embraces technological progress that leads to improved local economies and greater productivity (Meijer and Bolívar 2015). It also requires the involvement of authorized leadership and the participation of all stakeholders. From this perspective, Information Communication Technology (ICT) can be a powerful tool for triggering the interactive, participatory, and information-based urban environments, that are supported by the policies and subsequent actions of local authorities and communities (Garau 2013). In a nutshell, this represents the creation of what we call "smart communities."

In the current urban scenario—characterized by the pervasiveness of concepts such as ICT, smartness, flows, and territorial aggregations—good urban planning and the optimal management of a city's resources are possible, when environmental, social, and economic aspects are closely integrated in a medium- and long-term framework for action.

Having framed the role of policies and government institutions in Italy, this paper now analyzes the effects of Italy's current smart governance tools (policies and evolving laws) and highlights how local public bodies have implemented the "smart city" concept in their territories. This analysis has been conducted by studying publicly-funded projects that have been completed by Italy's community, national, regional, or local institutions, and cataloged in the *Italiansmartcity* platform. The data collected during this part of the study was then compared with the data provided on the iCity Rate platform. This platform was created to assess the smart performance of Italian cities.

2 Smart Governance: The Role of Policies and Government Institutions in Italy

The DAE is one of the initiatives under the EU 2020 strategy that defined member states' 2020 growth objectives. A common goal is the enhancement of social and economic benefits, related to environmental sustainability, the computerization of public agencies, and improved productivity and social cohesion, as a consequence of the optimal use of information and communications technologies.

In order to achieve its stated objectives, the EU DAE was translated into national initiatives, to be activated at the local level. The Italian Digital Agenda (*Agenda Digitale Italiana* [ADI]), established in 2012, is Italy's national initiative. Its main objective has been to advance Italy's progress toward a networked society as quickly as possible, and more specifically, to achieve a level comparable to that of other European countries. The objective has been to ensure that Italy would not be

excluded from competing in global online networks. Once achieved, this goal will enhance the use and management of ICT technologies, as well as those of sectors emerging in the domains of public administration and other enterprises.

To this end, Italy established the Agency for Digital Italy (*Agenzia per l'Italia digitale* [AgID]), which has accelerated the process of digitization through legislative, regulatory, and programming measures, as well as through the implementation of initiatives, proposals, and projects (AgID 2015). In other words, the AgID formulated a series of strategic priorities related to infrastructure and architectures; public administration; open data; digital competence; smart cities and communities; projects and international programs; and the innovations market). The objective of doing so was to ensure that the ADI's objectives were in line with the DAE's objectives (Neirotti et al. 2013; AGID 2015).

The smart perspective has provided an opportunity for growth, and in some ways entrusts governments with a great responsibility for promoting and facilitating investments in larger individual territories. According to Healey (2007), urban-planning activities—such as identifying framing dimensions, setting realistic timeline, and coordinating the implementation of policies/strategies and the activities of actors—represent only some aspects of the urban planning field. In fact, they must necessarily be integrated with the paradigms of smart cities, increasingly focused on European regulatory and financial parameters.

Although this perspective assumes a reticular approach, the planning restrictions, urban prescriptions, and building interventions necessary to urban regeneration are based on traditional approval and implementation mechanisms. On the one hand, they protect and re-qualify the built urban fabric, reconnecting central and peripheral areas, and thereby creating a broader balance between urban services, public spaces, and housing. On the other hand, everything happens according to rather long timelines, and long timelines are contrary to the philosophy of smart cities.

In this regard, the municipality appears to be the public entity most likely to be at the center of a process that identifies active-resolutive strategies. Because of its size and access to local administrative tools, the municipality can operate on the social fabric, and foster the integration of programming logic and individual public policies with relative ease (Maurasse 2015).

Obviously, considering each city as an isolated "island" bordered by administrative boundaries will not lead to this integration. Instead, it has to be pursued by defining partnerships and conducting negotiations, primarily between the various neighboring municipalities. It must be based on an understanding of a diversity of interests and objectives, and be geared toward the paradigm of a Smart Territory[3] rather than a Smart City. Within this framework, Italy's recent adoption of the law

---

[3]The authors intend the term Smart Territory to mean a wide area identified by specific characteristics that make it unique. In this regard, the literature is varied. However, in the literature, this definition is translated in different ways, depending on the field (geography, urban planning, or regional economy) and on the nationality of the authors. Besides the Smart Territory terminology (Louman et al. 2015; Carroll et al. 2014), we can find similar terms such as Smart Region (Roth et al. 2013; Morandi et al. 2015) and Smart Land (Bonomi et al. 2014).

56/2014 (also known as Delrio law[4]) is of particular interest. This law 56/2014 has prompted reflections on the new institutional architecture of metropolitan cities: they appear to be complex organisms that exceed the strictly administrative boundaries and define continuous relations with neighboring areas even if these are managed by different administrations.

Therefore, this law has led local governments to define their own administrative boundaries, at different levels of scale, and to establish or strengthen renovated aggregative modalities, especially among neighboring municipalities. Based on this reasoning, if public authorities are asked to reflect on economic and social development, in a way that requires going beyond their administrative mandates, the community has to be more active in assuming new responsibilities with respect to balancing the social system and environmental sustainability over the long run. It is a *cives-civitas* (between the citizen and the city) "agreement" that includes everyone —individuals in local administrative organizations, including municipalities, unions of municipalities, and metropolitan cities.

These public actors, therefore, play a key role in the development and consolidation of a smart city, particularly with regard to integrating various dimensions of urban development, such as their sustainability, resilience, and smartness, and thereby fostering "smart governance."

To avoid repeating failures that occur all too often, it is necessary to build shared perspectives on desirable scenarios. However, they have to be accompanied by assessments of the feasibility and effectiveness of the actions proposed and foster cooperation and coordination between different sectors in the same local administration.

This does not necessarily imply a loss of centrality in politics and a more "progressive" administration, but rather, it implies a re-design of leadership, and the creation of a systemic vision. These objectives are not limited to producing and protecting common goods and services, but include governing the dense urban network of relationships and the place-based system that includes the smart city. In this sense, a close relationship between the city (*strictu sensu*) and the territory constitutes the basis for establishing new leadership and new social responsibilities.

To achieve this goal, the administration should create new structures and/or introduce new functions dedicated to consolidating the network of relationships, in order to become a reference point for citizens. This process is also crucial to the formation of a shared understanding among the different stakeholders: it is not possible to establish common lines of action without a shared awareness of issues and needs, agreement on cultural values, and reliable, constructive approaches to providing public goods.

When engaged in decision-making processes, authorities rely on having access to data that represent the context in which they are working. That said, it is necessary to emphasize that, where there are strong communities, there are strong

---

[4]The name of this law comes from the name of the Minister of Infrastructures and Transport, Graziano Delrio.

institutions. Fragile institutional visions are the result of weaknesses in the community, which in turn feed a vicious circle that leads to disaffection and a gradual decrease in the provision of urban common goods.

Having the necessary skills, taking responsibility, and strong community relations are the factors that must "draw" the new citizenship. A strong concept of social capital is important to having real, smart, sustainable, and inclusive growth. It requires having the courage to envision outcomes beyond those defined in the agreement and focusing on citizenship and institutional trust, while supporting and promoting forms of active citizenship.

This reasoning leads to the interpretation of smart governance as a coordinated, integrated, distributed, and hybrid process[5] (Meijer 2015), in which local cooperative knowledge is linked with the most appropriate technologies to the quality of the urban environment, planning tools, and the existing programming. This creates the ability to solve problems in a systematic way.

In other words, smart governance becomes a wider urban strategy, aimed at improving the quality of life in urban areas where technological innovation enhances the development of social capital. As Deaton (2010) has emphasized, technological innovation facilitates all types of trade, and enables one to measure all the micro and macro phenomena and their correlations, thereby creating a "snapshot" of the processes that are to be monitored, measured, and evaluated.

Numerous studies have attempted to use this line of thinking to conduct research in order to monitor, measure, and evaluate urban processes and smart governance, though they have not always been able to analyze the dynamics at the micro- and macro-levels simultaneously. The most recent studies (Toppeta 2010; Caragliu et al. 2011; Huggins and Clifton 2011; Dodgson and Gann 2011; Abdulrahman et al. 2012; Between 2013; Mundula et al. 2015; Marsal-Llacuna 2015) have used as a starting point the measurements conducted by Giffinger et al. (2007) of smart cities. Other studies are based on concepts that address the urban debate (UNCHS 1999; Kaufmann et al. 2005; Rosales 2011; Shen et al. 2013). Some studies are focused on more sectoral and specification analysis (Cox and Mari 1988, 1991; Peck 2005; Doel and Hubbard 2002; Garau et al. 2015), and still others focus on the quality of urban life (Marans 2003; Lazauskaitė et al. 2015; Fulford et al. 2015). The level of confidence that has emerged from these studies' use of measurements, evaluations, comparisons, and classifications, has contributed to transforming the role of city governance. In addition, these studies have revealed that the determining factors for

---

[5]In particular, Mejer argues: "the idea of smart city governance as concentrated intelligence stresses that new technologies—big data, data warehousing, monitoring tools—enable central steering actors to strengthen their intelligence, provide more integrated services, develop better policies, and steer other actors in the city more effectively. […] The idea of distributed intelligence highlights that new technologies—social media, Internet, open data—enable the various actors in the city to collaborate more effectively and produce better solutions for the city. […] The two modes of smart city governance are ideal types and should be seen as extremes on a scale of smart in other word, city governance. Intermediate forms are modes of hybrid smart city governance. Hybrids may lean towards one of the extremes or form a balanced combination of concentrated and distributed forms of governance" (Meijer 2015: 77–78).

smart governance assessment are: the network between neighboring cities; the amount of funded projects; and the amount of funding. For this reason, in the next section, the authors analyze them and apply the system to these factors.

3   Italian Projects in Support of Smart Urban Governance

It is apparent that governing urban complexity, which includes understanding all its political, social, and territorial implications, and embracing the evolutionary process that leads to smart cities, is a particularly sensitive topic, because it requires a collective effort by planning and management agencies from the EU to local levels. In Italy, this task is further complicated by the national context, which is characterized by some metropolitan hubs that are in opposition to prevailing small, and often contiguous, centers. The first of these, despite being the most problematic in terms of economic and social conflicts and environmental impacts, are more likely to be internationally competitive. The latter are likely to be the victims of provincialism, at the edge of a renewal process that presupposes a greater effort to remove traditional governance, and is too closely bound to previous administrative boundaries and sectoral policies.

Italian cities have disparate urban governance scales, and their objectives vary by city. These factors have significant impacts on how actors frame their work and priorities. To provide an overview of the Italian situation, the Smart Cities platform —organized and promoted by the National Association of Italian Municipalities (*Associazione Nazionale dei Comuni italiani,* [ANCI])—documents project experiences that have a smart perspective. The platform is currently being implemented by 158 Italian municipalities (http://www.italiansmartcity.it/).

As shown in Table 1, "government" has seen less investment (only 3 % of the total) than any other sector (environment 8 %; economy 10 %; people 5 %; living 8 %; mobility 22 %; planning 27 %; energy 17 %). The municipalities that have implemented the highest number of projects on the theme of government are Milan (13.5 %, 11 of 81 projects in total); Lecce (35.7 %, 10 of 28 projects); Turin (12.8 %, 10 of 78 projects); Pordenone (30 %, 9 of 30 projects); Bergamo (27 %, 6 of 22 projects); Rieti (26 %, 6 of 23 projects); Cagliari (12.5 %, 6 of 48 projects); and Palermo (42.8 %, 6 of 14 projects). The projects listed deal primarily with the following sub-themes: open data; eGovernment; managing public spaces and commons; and transparency and e-democracy. Twenty-three other projects related to planning were added to this list, in a subsector called governance. Of these, twelve have been implemented without any funding (Table 1).

These data summarize the already initiated, ongoing, and completed projects at the local level, while also providing an assessment of the same in relation to the ability to impact the three dimensions of sustainable development: (1) economic, or the ability to generate income and employment for the population, and to influence the territory's levels of economic growth; (2) social, meaning the ability to guarantee that human welfare conditions are equally distributed among all classes; and

Table 1 Funding levels and numbers of municipalities involved in smart initiatives by sector (Adapted from the Italian Smart Cities platform. Accessed March 30, 2016)

Sectors	Euro	Budget %	Projects's number	Municipalities involved	Municipalities involved %
Environment	€ 289.981.711	8 %	191	83	53 %
Economy	€ 376.906.091	10 %	113	53	34 %
People	€ 171.416.226	5 %	181	58	37 %
Living	€ 283.099.247	8 %	168	76	48 %
Mobility	€ 820.513.992	22 %	245	80	51 %
Planning	€ 1.012.075.377	27 %	103	45	28 %
Planning-Governance	€ 8.276.688,90	1 % (of planning)	23	17	38 % (of planning)
Energy	€ 642.492.459	17 %	139	55	35 %
Government	€ 113.673.883	3 %	169	54	34 %
Total	€ 3.710.158.986	100 %	1308	158	100 %

(3) environmental, meaning the ability to maintain the quality and continual availability of natural resources. However, this dataset give us no idea of the cities' performance in absolute terms—a city's performance relative to its own targets or "internal performance"—or in relative terms—a city's performance relative to that of other cities or "external performance." This assessment is provided in the iCity Rate dataset (http://www.icitylab.com/the-relationship-icityrate/edition-2015/data-2015/) using a composite index of smartness.

This index is comprised of the values for seven dimensions (economy, living, environment, mobility, people, governance, and legality), each of which is based on twelve indicators. It includes the values from all provincial capitals from 2012 to 2015. The first problem that arises is comparing these datasets with those in the Italiansmartcities' platform database, which analyzes the projects of 158 cities on eight dimensions (environment, energy, economy, people, living, mobility, government, and planning). A two-step solution has been used to resolve this problem. Firstly, the definitions of the dimensions in each of the two datasets were compared. From this analysis, it was possible to confirm the following: four areas were perfectly matched (economy, living, mobility, and people); environment and energy dimensions of the Italiansmartcities platform matched the environment dimension in the iCity rate; and, the government and planning dimensions matched the governance sector in the iCity rate. The legalities are not comparable, but these data are only available for 2015. Once correspondence had been established between the dimensions, only those cities represented in both datasets were selected for this study, for a total of 53 cities.

Even though it is not possible to assert that the projects documented in the Italiansmartcities platform (ranging from 2012 to 2015, of which most are not concluded) had influenced the values of the indicators of the respective cities (ranging from 2012 and 2015), it is possible to assess those dimensions in which the cities had made investments between 2012 and 2015, and stated each city's

performance against each dimension in 2012 (even though we do not know if the administrators knew the indexes' values).

To conduct this assessment, we proceeded in two steps. Firstly, for each city, we ranked the performances of the projects implemented between 2012 and 2015 by (a) their different dimensions in 2012 (r_1), (b) the number of projects undertaken (r_2), and (c) their amounts (r_3). Secondly, we built two indexes that ranged between −1 and 1 (correlation between r_1 and r_2, correlation between r_1 and r_3), and displayed them on a Cartesian graph as coordinates (Fig. 1).

This analysis highlighted four types of cities, which we categorized as smart, follower, start-up, or, as usual:

(1) Smart Cities: these were cities that have funded few projects at low levels, in the dimensions for which their performance was higher, and many projects at high levels, for which their performance was lower
(2) Follower Cities: these were cities that have funded many projects at a low level, in dimensions for which their performance was higher, and few projects at a high amount for which the performance was lower
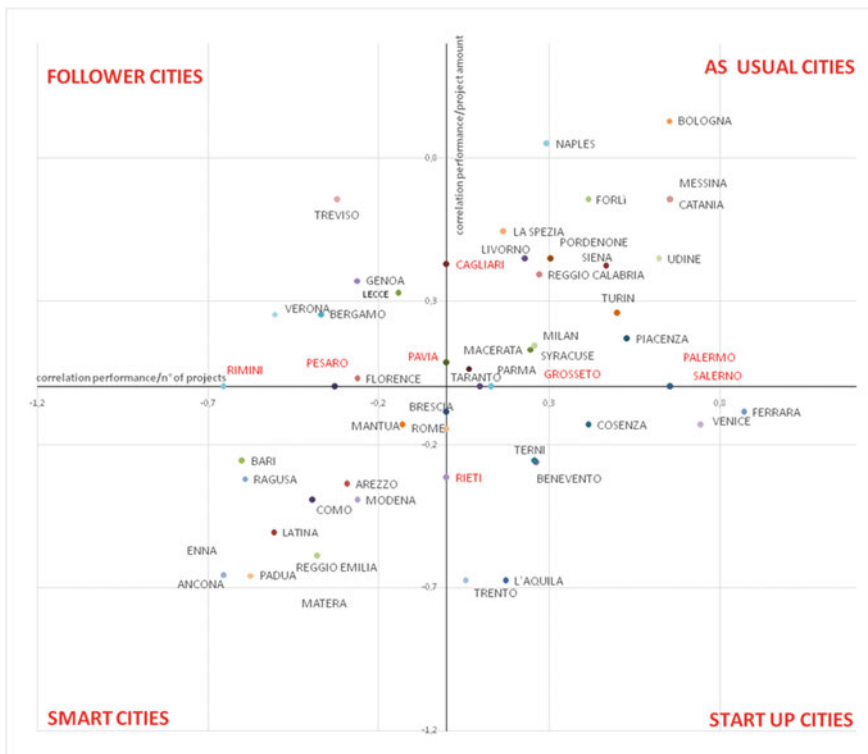

Fig. 1 Investments and the numbers of city projects initiated, relative to their performance (*Source* Adapted from the Italian smart cities and iCity Rate platforms.)

(3) Start-up Cities: these cities funded few projects at a high level, in the dimensions for which their performance was higher, and many projects at a low amount for which their performance was lower;

(4) As usual Cities: these cities funded many projects at a high level, in the dimensions for which their performance was higher, and a few projects at a low level for which the their performance was lower

These results show that most of the cities (18) tended to invest in the dimensions for which their performance was higher, and quite a large number (14) tended to invest in dimensions for which their performance was lower. Thirteen of the cities analyzed were either follower cities (six) or start-up cities (seven). Finally there were five cities (Grosseto, Palermo, Pesaro, Rimini, and Salerno) in which the projects had been developed at no cost, so it is not possible to calculate correlations between the variables, and three cities (Cagliari, Pavia, and Rieti) that showed no correlation between their performance in the different dimensions in 2012 and the number of projects undertaken. Looking in detail at the performance of the same 53 cities in terms of smart governance, it is apparent that cities with good value in terms of smart governance are among the best (except in the case of Trieste) (Table 2 and Fig. 2).

At first, this result might appear to suggest that "smart governance" is very significant in generating urban smartness. It is true, however, that the definition of smart governance used to classify projects in the iCity Rate platform does not correspond with the one we think is most appropriate: smart governance is a process capable of activating relations and synergies between local actors within a broader context than that of the city's administrative border. The definition used in the iCity Rate platform instead adopts a quantitative approach, in which smartness is defined by the process of implementing urban growth through technological solutions, rather than through triggering forms of relational networks, and providing support to the development of smart communities.

Table 2 I City ranking 2014–2015 (I City Ranking 2015)

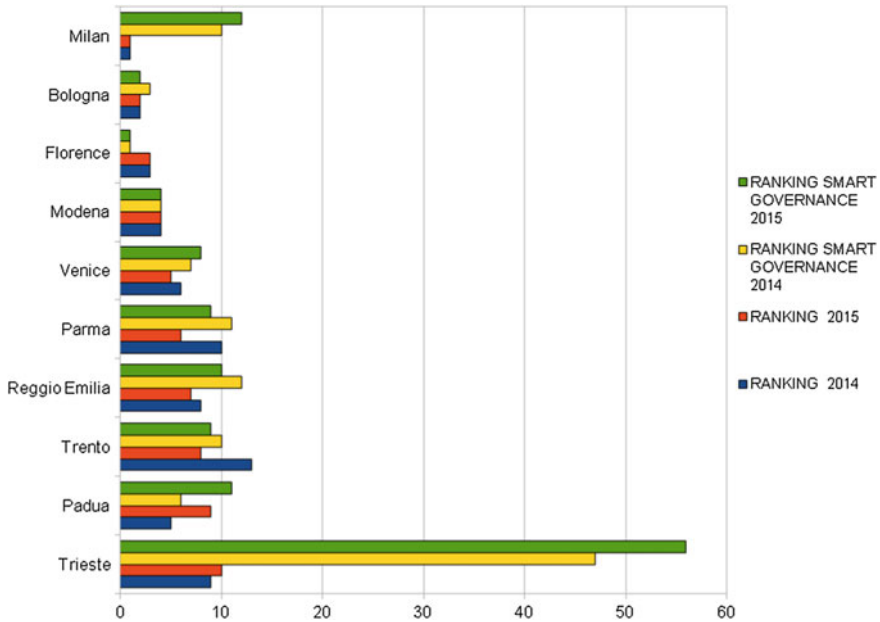| Cities	Ranking 2014	Ranking 2015	Ranking smart governance 2014	Ranking smart governance 2015
Milan	1	1	10	12
Bologna	2	2	3	2
Florence	3	3	1	1
Modena	4	4	4	4
Venice	6	5	7	8
Parma	10	6	11	9
Reggio Emilia	8	7	12	10
Trento	13	8	10	9
Padua	5	9	6	11
Trieste	9	10	47	56

Fig. 2 I City Ranking 2014–2015 (I City Ranking 2015)

Looking at the ranking of the projects' smart governance dimensions (Italiansmart platform), it is apparent that there is an inverse correlation in terms of ranking: the best-performing cities are those with lower investment values. The explanation for this can be addressed through a new generation of smart governance. In fact, the framing of all dimensions (environment, economy, people, living, mobility, planning, energy, and government) contributes to the construction of those relational processes, the virtuous dynamics necessary to the development of a smart city, and to the emergence of smart communities. In other words, to initiate the needed change that will enable and empower strategic and transformative planning, changing the usual way of programming urban-networked systems may be all that is needed.

4 Strategic Vision and Smart Governance for Sustainable Urban Regeneration

Based on this study's findings, building a smart region is a matter of governance, which is understood as a concept that embraces all sub-sectors in which smartness has been structured, based on a shared vision that is consistent with, and feasible in, the domain of declared smart projects.

To this end, as a first step, the authors examined whether the same 53 cities previously analyzed, and in particular the top ten smart cities in the ranking based on iCity Rate data (Table 2), had spatial strategic plans. Of the 53 cities, 26 have a strategic plan, and of the top ten, only five cities (Milan, Bologna, Florence, Venice and Trento) have a spatial strategic plan. Although the number is partial, this result may suggest that having a spatial strategic plan—namely, an urban planning tool stating a declared vision—may be a necessary but not a sufficient condition for stating that a city has the basis for a smart city. This is also apparent among cities that have a strategic spatial plan but are ranked lowest in the 2015 ranking, such as Cagliari, which is in 60th place, and which also has a metropolitan spatial strategic plan, and Messina, in 93rd place, or Reggio Calabria, in 102nd place. Secondly, this result depend on a city's performance, rather than on its endowments (Mundula and Auci 2015).

How did a city without a spatial strategic plan emerge as a smart city? Why are cities with strategic plans not among the top cities in the smart cities ranking? With reference to the second question, a possible answer is that the planning choices were not coherent, or had not matured enough to demonstrate their effects and their impacts.

In addition, the survey indicates that some top-ranked cities have been leaders in some sectors for years—for example, Bologna is recognized as a university city, and Florence and Venice as tourist cities. This suggests that, over the years, they have developed an approach aimed at promoting their brands. They have urban strategies that "embrace" their cities, each recognizing a style that feels like its own, and, because of it, is recognized by all others.

City branding is a marketing-sector concept, and has as its first purpose the development of destinations—primarily tourism destinations. Nonetheless, the capacity of these cities to recognize shared objectives and to systematize their own resources for achieving them actually enables the coincidence of brand and vision. This coincidence is confirmed in the recent literature on this subject (Merrilees et al. 2009) which tends to shift the focus from non-resident stakeholders (tourists) to resident stakeholders, because they not only have a longer time horizon, but also a perspective that extends from the city to the region (Olins 2003). This approach is based on people's perceptions and images and places them at the center of the activities designed to shape smart regions and their futures. Choosing and managing the brand or the vision, and recalling the idea of the place's identity, becomes an attempt to influence and treat the mental maps of city stakeholders in a way that is coherent with present circumstances and the future needs of the city.

For all these reasons, the logical next step to evaluating the smartness of cities involves analyzing their resource allocations, in relation to the measurement of their urban performance, i.e., evaluating how cities transform their branding and developing planning statements that put into play the relational processes between neighboring cities (referred to by descriptors such as strategic plans, or health) that are ultimately expressed as coherent administrative acts (Fig. 3).
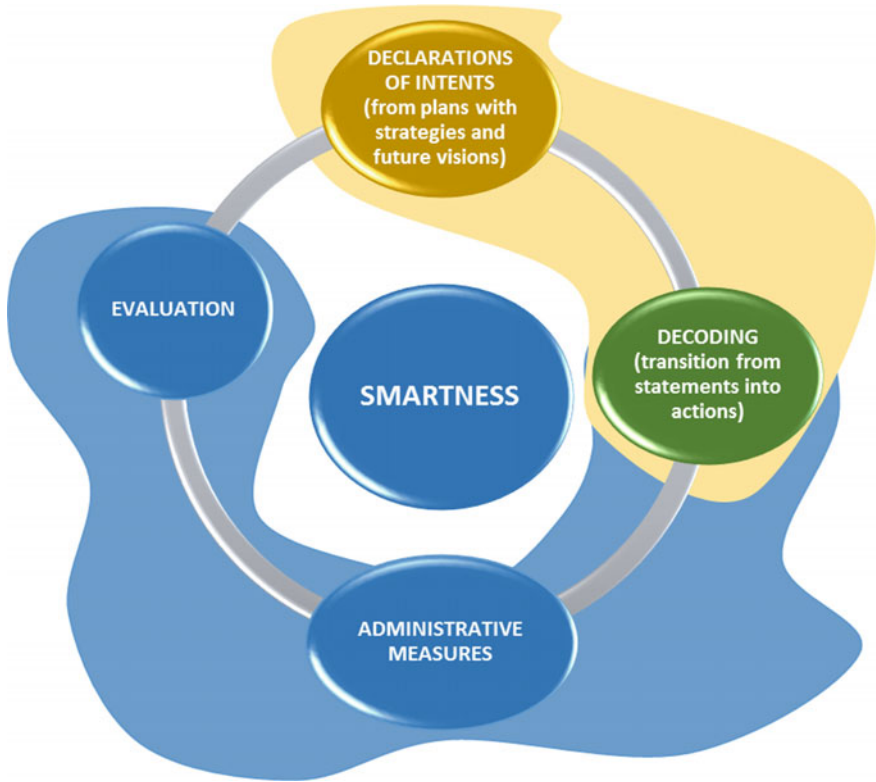
Fig. 3 Evaluation of the cities performance

By adopting this approach, the process of developing strategic plans, in a broad sense, can become a condition that is not only necessary, but also sufficient, for building a smart region.

5 Conclusions

This work has enabled us to identify and reflect on some needed and essential aspects of achieving sustainable urban regeneration in a smart key: managing policies with dedicated responsibilities; focusing on relational components between cities; engaging actors in a "common direction" with regard to the organization of collective action; and mobilizing resources in a cohesive and closer way. The comparison of the 53 cities conducted in this study has shown that the majority of the cities (18) tend to invest in those dimensions in which their performance is higher, and quite a number (14) tend to invest in the dimensions in which their performance is lower.

In relation to these results, we must be aware of what all this means, not so much in terms of technical feasibility, but rather in terms of political and human capital, by taking a multidisciplinary approach, and fostering "visionary leadership," capable of governing, but also capable of sharing values, concerted actions, mobilizing resources, and looking towards the future of community.

Finally, the projects that have been analyzed provide evidence from which can emerge new stimuli, in order to create a reshaped leadership within a specific urban context. In other words, there is not one strategy that is appropriate for all cities, but certainly there is a best strategy for each city. It is to be found by sharing and extrapolating the successes of other cities, as part of a healthy competition between cities, city branding (Lucarelli and Berg 2011) and big-city urban events such as Expo 2016, the Olympics in Turin 2006, international trade fairs such as Colombiadi of Genoa, and the Olympics in Rome 2020 (Balletto 2003).

In relation to these results, we must be aware of what all this means, not so much in terms of technical feasibility, but rather in terms of political and human capital, by taking a multidisciplinary approach, and fostering "visionary leadership," capable of governing, but also capable of sharing values, concerted actions, mobilizing resources, and looking towards the future of community.

References

Abdulrahman, A., Meshal, A., & Imad, F. T. A. (2012). Smart cities: Survey. *Journal of Advanced Computer Science and Technology Research, 2*(2), 79–90.

AgiD. (2015). Agenda Digitale italiana. Retrieved April 15 2016 from http://www.agid.gov.it/agenda-digitale/agenda-digitale-italiana.

Balletto, G., a cura di. (2003). Fiere e città. Evoluzione e strategie nella competizione territoriale, CUEC University Press, Cagliari.

Between. (2013).*Confrontarsi per diventare smart, REPORT 2013*. Retrieved April 15 2016 from http://www.trail.unioncamere.it/writable/documenti/Between_SmartCityIndex2013.pdf http://www.trail.unioncamere.it/writable/documenti/Between_SmartCityIndex2013.pdf.

Bonomi, A., & Masiero, R. (2014). *Dalla smart city alla smart land*. Marsilio Editori.

Caragliu, A., Del Bo, C., & Nijkamp, P. (2011). Smart cities in Europe. *Journal of Urban Technology, 18*(2), 65–82.

Carroll, J.M., Kropczynski J.,& Kyungsik, H. (2014). Grounding activity in people-centered smart territories by enhancing community awareness. *Interaction Design and Architecture(s) Journal - IxD&A, 20*, 9–22.

Cox, K., & Mair, A. (1988). Locality and community in the politics of local economic development. *Annals of the Association of American Geographers, 78*, 307–325.

Cox, K., & Mair, A. (1991). From localised social structures to localities as agents. *Environment and Planning A, 23*, 197–213.

Deaton, A. (2010). Instruments, randomization, and learning about development. *Journal of Economic Literature, 48*(2), 424–455.

Dodgson, M., & Gann, D. (2011). Technological innovation and complex systems in cities. *Journal of Urban Technology, 18*, 101–113.

Doel, M. A., & Hubbard, P. J. (2002). Taking world cities literally: Marketing the city in a global space of flows. *City, 6*(3), 351–368.

Donolo,C., & Federico, T. (2013). La questione meridionale e le smartcities. *Rivista economica del Mezzogiorno*, *27*(1–2), 189–210.

Fulford, R. S., Smith, L. M., Harwell, M., Dantin, D., Russell, M., & Harvey, J. (2015). Human well-being differs by community type: Toward reference points in a human well-being indicator useful for decision support. *Ecological Indicators, 56*, 194–204. doi:10.1016/j. ecolind.2015.04.003.

Garau, C., Masala, F., & Pinna, F. (2015). Benchmarking smart urban mobility: A study on Italian cities. In *Computational Science and Its Applications–ICCSA 2015,9156* (pp. 612–623). Springer International Publishing. doi: 10.1007/978-3-319-21407-8_43.

Garau, C. (2013). *Processi di Piano e partecipazione*. Roma: Gangemi Editore.

Giffinger, R., Fertner, C., Kramar, H., Kalasek, R., Pichler-Milanović, N., & Meijers, E. (2007). *Smart cities: Ranking of European medium-sized cities*. Centre of Regional Science of Vienna. Retrieved April 15 2016 from www.smart-cities.eu.

Healey, P. (2007). Urban planning today–edited by William S. Saunders. *International Journal of Urban and Regional Research*, *31*(4), 887–889.

Huggins, R., & Clifton, N. (2011). Competitiveness, creativity, and place-based development. *Environment and Planning A, 43*(6), 1341–1362. doi:10.1068/a43559.

Kaufmann, D., Léautier, F., & Mastruzzi, M. (2005). *Governance and the city: An empirical exploration into global determinants of urban performance*. Policy Research Working Paper 3712, Washington, DC: World Bank.

Kunzmann, K. R. (2014). Smart cities: A new paradigm of urban development. *Crios, 1*, 9–20. doi:10.7373/77140.

Lazauskaitė, D., Burinskienė, M., & Podvezko, V. (2015). Subjectively and objectively integrated assessment of the quality indices of the suburban residential environment. *International Journal of Strategic Property Management, 19*(3), 297–308.

Louman, B., Campos-Arce, J.J., Mercado, L., Imbach, P., Bouroncle, C., Finegan, B. et al. (2015). Climate smart territories (CST): An integrated approach to food security, ecosystem services and climate change in rural areas. In P.A. Minang, M. van Noordwijk, O.E. Freeman, C. Mbow,J. de Leeuw, & D. Catacutan (Eds.), *Climate smart-landscapes: Multifunctionality in practice*. Nairobi: World Agroforestry Center.

Lucarelli, A., & Berg, P. O. (2011). City branding: A state-of-the-art review of the research domain. *Journal of Place Management and Development, 4*(1), 9–27.

Marans, R. W. (2003). Understanding environmental quality through quality of life studies: The 2001 DAS and its use of subjective and objective indicators. *Landscape and Urban Planning, 65*(1–2), 73–83. doi:10.1016/S0169-2046(02)00239-6.

Marsal-Llacuna, M.-L. (2015). Measuring the standardized definition of "smart city": A proposal on global metrics to set the terms of reference for urban "smartness." In O. Gervasi, B. Murgante, S. Misra, M.L. Gavrilova, A.M.A.C. Ana Maria Rocha, C. Torre, D.Taniar, B.O. Apduhan (Eds.), *Computational Science and its Applications–ICCSA 2015: 15th International Conference, Banff, AB, Canada, June 22–25, 2015, Proceedings, Part II*(pp. 593–611). Switzerland: Springer International Publishing. doi: 10.1007/978-3-319-21407-8_42.

Meijer, A. (2015). Smart city governance: A local emergent perspective. In J.R. Gil-Garcia, T.A. Pardo, & T. Nam (Eds.), (2015). *Smarter as the new urban agenda: A comprehensive view of the 21st century city*. Public Administration and Information Technology 11 (pp. 73–85). Springer. doi: 10.1007/978-3-319-17620-8_4.

Meijer, A., &Bolívar, M.P.R. (2015). Governing the smart city: A review of the literature on smart urban governance. *International Review of Administrative Sciences*. Retrieved April 15 2016 from http://ras.sagepub.com/content/early/2015/04/29/0020852314564308.abstract. doi:10.1177/0020852314564308.

Mistretta, P., & Garau, C. (2013). *Città e sfide*. Successi e criticità dei modelli di governance, CUEC, Cagliari: Conflitti e Utopie. Strategie di impresa e Politiche del territorio.

Maurasse, D. (2015). Strategic considerations for urban anchor institutions in local and regional engagement. In P.K. Kresl (Ed.), *Cities and partnerships for sustainable urban development* (pp. 30–44). Edward Elgar Publishing.

Merrilees, B., Miller, D., & Herington, C. (2009). Antecedents of residents' city brand attitudes. *Journal of Business Research, 62*(3), 362–367.

Morandi, C., Rolando A., Di Vita S., (2015). *From smart city to smart region*. Springer.

Mundula L. and Auci S., (2015). *Smart cities and eu growth strategy: A comparison among european cities*. In FUET Working Paper, n. 02/2015.

Neirotti, P., Michelucci, F. V., Scorrano, F., Calderini, M., & De Marco, A. (2013). *Smart City*. Rapporto monografico, CDP, Torino: Progetti di sviluppo e strumenti di finanziamento.

Olins, W. (2003). *On brand*. Chapter: Thames & Hudson. 8.

Peck, J. (2005). Struggling with the creative class. *International Journal of Urban and Regional Research, 29*(4), 740–770.

Puppim de Oliveira, J. A., Doll, C. N. H., Balaban, O., Jiang, P., Dreyfus, M., Suwa, A., et al. (2013). Green economy and governance in cities: Assessing good governance in key urban economic processes. *Journal of Cleaner Production: Special Volume., 58*, 138–152.

Rosales, N. (2011). Towards the modeling of sustainability into urban planning: Using indicators to build sustainable cities. *In Procedia Engineering, 21*, 641–647.

Roth, S., Kaivo-Oja, J., & Hirschmann, T. (2013). Smart regions: Two cases of crowdsourcing for regional development. *International Journal of Entrepreneurship and Small Business, 20*(3), 272–285.

Shen, L., Kyllo, J. M., & Guo, X. (2013). An integrated model based on a hierarchical indices system for monitoring and evaluating urban. *Sustainability, 5*, 524–559.

Toppeta, D. (2010). *The smart city vision: how innovation and ict can build smart, "liveable", sustainable cities*, THINK! REPORT 005/2010.

UNCHS, (1999). *UNCHS Expert Meeting on Urban Poverty and Governance Indicators,* 29 April to May 1999, Nairobi Kenya. Retrieved from http://www.gdrc.org/u-gov/indicators.html.