

Urban Fragility

Subjects: Economics

Contributor: Maria Rosa Trovato

Urban fragility is one of the big challenges for the late-modern city coping with the growing external pressures (from the environment) and internal tensions (within the social system), typically referable to the socio-cultural and political-economic climate, definitely characterising the current "Age of Changes".

A broad institutional context is involved in that undertaking, and many studies and reports show how fragility is linked above all to the growing complexity of the cities. The ever-increasing population, extension, density and cultural mixite, as well as the fast "filtering up and down" processes, are some symptoms of the combination of two fundamental drivers.

Firstly, the exponential technological progress—mostly concerning the geographical and digital accessibility—has been encouraging far more people to claim a better socio-economic status, which urban location, by definition, is symbol of.

Secondly, the progressive human/environmental unfairness of economy over the planet and the related increase in insecurity, push the transfer of large masses of the population towards the richer countries of the developed geo-economic areas, and in particular towards the larger, more heterogeneous, complex and vibrant cities.

This new climate involves the accountability of the neoliberal model allowing a limited number of subjects to concentrate the largest part of the liquidity created as a result of the progressive "financial abstraction" of the real wealth over the era of post-globalization, that is the age of the contemporary archipelago-economies.

The development of the city has always gone together with the spread and reinforcement of the financial institutions more able to give a monetary shape to the flows of wealth, thus indirectly increasing the part of the surplus of social product intended to the social overhead capital; the latter is at the same time cause and effect of the concentration of wealth and people, activities and tensions, conflicts and hopes (in one word, of value) in urban shapes.

On the urban-scale, in turn, such processes have been occurring creating and populating denser and denser built areas at the expenses of other ones (decaying historic centers or peripheral neighborhoods) progressively neglected and jeopardized. The coexistence of such different value density degrees increases the fragility of the city as a whole; the most visible and permanent tracks of these inequalities reflect in the urban shape and namely in its economic form that is the urban capital value shape, displayed by the real estate market price map.

Some remarks about the concept of fragility in the field of territorial studies can help to better understand how the urban eco-social system deals with it. The perspective of the "real estate-scape", in fact, assumes the social and urban fragility issue, since one of the main focuses of the urban renovation planning process in its broad lines.

The colloquial meaning of "fragility" closely relates to its physical definition concerning the tendency of a solid material to break abruptly, without any yielding deformation, which has previously occurred. In the urban studies some insights need to be done to understand a conceptual significance of fragility, considering its original causes and those effects typically concerning the current drift of the urban phenomenon.

Since the above early definition does not take into account the driving forces of the urban fragility and their most perceptible effects, a further and more extensive meaning of it can be derived from material sciences, thus highlighting the deep and constitutive causes of it.

Fragility is "the property that characterizes how rapidly the dynamics of a material slow down as it is cooled toward the glass transition: materials with a higher fragility have a relatively narrow glass transition temperature range, while those with low fragility have a relatively broad glass transition temperature range".

By metaphorizing such definition, and referring to the relationship between the socio-economic situation of a city and the real estate capital asset value, an urban system can be considered more fragile when the "socio-economic cooling" (i.e., a decrease in rights and incomes) gives rise to sudden, pathological and irreversible fall of the real estate market prices; on the contrary, an urban system seems to be more resilient when such effects are slower and easily metabolized, and can also be reversed when an opposite cause occurs.

Furthermore, “physically, fragility may be related to the presence of dynamical heterogeneity. (https://en.wikipedia.org/wiki/Dynamical_heterogeneity). in glasses, as well as to the breakdown of the usual Stokes–Einstein relationship between viscosity and diffusion”.

Keywords: "age of changes" ; human capital ; urban capital ; real estate-scape

1. Definition

Urban/social fragility is the main focus of most studies on civil economy involving the commitment of politics in the prospect of integrating and somehow guiding an ordered development of and ordered communities. The contemporary city is strongly influenced by the incommunicability between the social system and environment, the latter more and more, including urban and societal components. This study tries to outline a comparative social-urban profile of Picanello, a popular central neighborhood of Catania, in Sicily, Italy, characterized by the combination of different urban and social life-quality levels, thus expressing a heterogeneous vulnerability/resilience profile.

2. Introduction

Urban fragility is one of the big issues that faces late-modern cities who are committed to cope with the growing external pressures (from the environment) and internal tensions (within the social system)—referable to the socio-cultural and political-economic climate, in the current “Age of Changes”.

This issue is placed in a very wide institutional context ^[1], where studies and reports have shown how this criticality is linked above all to the growing complexity of the cities ^{[2][3]}. The increase in population, extension, and density, the growing cultural mixite, the fast “filtering up and down” processes, are some symptoms of the combination of two fundamental drivers. Firstly, the exponential technological progress—mostly concerning the geographical and digital accessibility—has been encouraging far more people to claim a better socio-economic status, which urban location is a symbol of. Secondly, the progressive human/environmental unfairness of economy over the planet and the related increase in insecurity, push the transfer of large masses of the population towards the richer countries of the developed geo-economic areas, and in particular towards the larger and more heterogeneous cities.

This new climate involves the accountability of the neoliberal model allowing a limited number of subjects to concentrate the largest part of the liquidity created as a result of the progressive “financial abstraction” of the real wealth over the era of post-globalization, that is the age of the contemporary archipelago-economies.

The development of the city has been supported by the emerging of financial institutions that have given a monetary shape to the flows of wealth, thus allowing the surplus of social product to become social overhead capital; the latter is at the same time cause and effect of the concentration of wealth and people, activities and tensions, conflicts and hopes ^[4] (in one word, of value) in urban shapes.

On the urban-scale, in turn, such processes have been occurring creating and populating denser and denser built areas at the expenses of other ones (decaying historic centers or peripheral neighborhoods) progressively neglected and jeopardized. The coexistence of such different value density degrees increases the fragility of the city as a whole; the most visible and permanent signs of these inequalities can be displayed through the analysis of the values of urban capital which are partly reflected in the real estate market prices.

This measurement of the urban-architectural value can be assumed as the final stage of the progressive abstraction of the concrete values—material, including immaterial; quantitative, including; qualitative, etc. Such an abstraction level can be considered the ultimate one, due to the convergence of social and monetary aspects. The former concern the real estate market prices as basically bid prices, and as such, having a socio-psychological origin and an administrative destination; in fact, they are part of the taxable income, and as such, they contribute to the creation, reproduction and enhancement of the social urban capital. The latter concerns the specific economic, financial, and monetary profile of the real estate capital asset—this is due to its ability to perform the whole range of its typical economic functions (utilitarian, productive, and speculative).

The social system results from the abstraction of the multiple individual axiological profiles in a superordinate ethical behavioral model. As a consequence, the abstraction of the concrete urban values in real estate private (price) and public (taxes) values has an ethical characterization that supports: In concrete terms, the representation of urban vulnerability by means of urban and demographical statistic indices ^{[5][6]}; in abstract terms, the maps of the real estate market prices. The

former represents the instances of the human capital, as for the hope of dignified working/housing conditions; the latter represents the needs of the urban capital, as for the expectation of creating durable and profitable (real estate capital) assets.

Furthermore, real estate capital asset constitutes one of the basic resources, as well as one of the main targets, of the urban estate increase in value, thus playing a crucial role in triggering or reducing the urban vulnerability. Specifically, the dynamics concerning the convergence or conflict of private interests and public values outline the mutual influence between the individual creative push to development (sparking differences), and the conservative organization of this energy aimed at turning it in a stock of social value able to release the typical services of the urban capital asset.

The fair trade-off between development and conservation, influencing the urban vulnerability degree, results from the coherence between the property income tax system and the renovation subsidies measures in force. The latter are generally aimed at powering the harmonic relationship between center and peripheries to prevent some neighborhoods from embarking on the spiral of impoverishment, as well as others to accumulate too much surplus.

3. Data, Model, Applications and Influences

The area nowadays occupied by the neighborhood of Picanello (Figure 1a) is one of the two expansion zones, namely, the north-eastern one, of the historic urban core of Catania. The district is part of the “historic periphery” extending beyond the “Cinda daziaria” (duty walls) in 1895 (Figure 1b). The area was intended to this purpose starting from the end of XIX century within the Masterplan drafted between 1879 and 1882 by F. Fichera and B. Gentile Cusa. In that period the municipality started to deal, although unsuccessfully, both the poor housing condition compared to the new standards, and the disordered and episodic new buildings in the countryside.

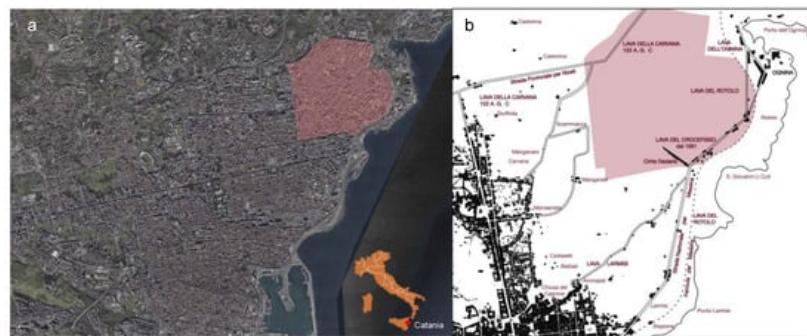


Figure 1. (a) Picanello neighborhood in the urban context of Catania; (b) The countryside area intended to the north-eastern urban development (our elaboration from [7]).

Even the Masterplan of 1934 could not start the construction of the neighborhood, due to the incompleteness of the administrative process covering just the zoning plan, then further updated, in 1952, when, finally, the municipal administration established the municipal delegations for decentralizing the utilities in the new suburbs. According to the Masterplan by Piccinato, in 1964, a Directional and Commercial Centre was supposed to be constructed in Picanello (Figure 2, zone “I” in fuchsia), after the preparation of a Detailed Plan, thus supporting the creation of a new urban pole.

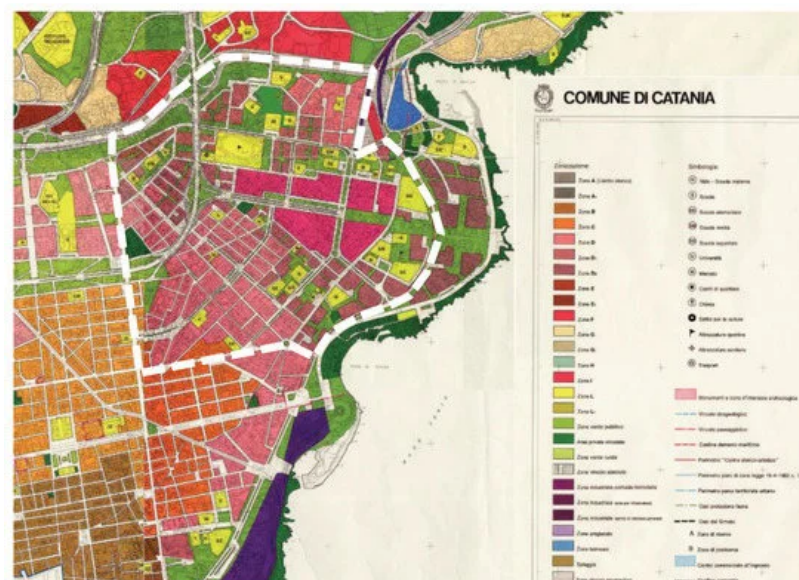


Figure 2. Picanello in the Piccinato Masterplan framework, 1964; the red area displays the prescription for a commercial and directional center (Source: Municipality of Catania, Italy, <http://pcn.minambiente.it/viewer/>, accessed on 15 January 2019).

The municipal territory of Catania is divided into 10 Municipal Areas (I Centro; II Ognina-Picanello-Stazione, III Borgo-Sanzio, IV Barriera-Canalicchio, V San Giovanni Galermo, VI Trappeto-Cibali, VII Monte Po-Nesima, VIII San Leone-Rapisardi, IX San Giorgio-Librino, X S. Giuseppe La Rena-Zia Lisa) established in 1995, then (2012) grouped in six Districts (Figure 3). A further subdivision concerns the 19 census areas (ACEs). Picanello is part of the II Municipal Area together with the neighborhood of Ognina and belongs to the Second District together with the IV Municipal Area (Barriere Canalicchio) and includes the whole ACE 12 and a small area of ACE 11.

Circumscription	1th Circumscription Centro Storico	2th Circumscription Picanello- Ognina-Barriera-Canalicchio	3th Circumscription Borgo Sanzio	4th Circumscription Centro- San Giovanni Galermo- Trappeto-Cibali	5th Circumscription Monte Po-Nesima-San Leone-Rapisardi	6th Circumscription San Giorgio-Librino-San Giuseppe La Rena- Zia Lisa- Villaggio Sant'Agata			
Municipality Areas	Old town	Barriera - Canalicchio	Ognina - Picanello	Borgo - Sanzio	6_Trappeto - Cibali	5_ S. G. Galermo	8_ S. Leone - 7_Monte Po- Nesima	10_ S. G. La Rena - Zia Lisa- Villaggio Sant'Agata	9_San Giorgio- Librino
Census Divisions	1 Ursino, Angeli custodi, S. Cristoforo, S. Benito vecchio, 18 Giudecca (Benedettini), Antico corso, 19 Città, Conso Sicilia, Via etnea to the sea)	2 StazioneOgnina, 4 Barriera Canalicchio, 12 Italia, 11 Picanello Ognina	15 Borgo, 16 Sanzio, 3 Tribunale	6 S. G. Galermo, 14 Trappeto S. Nullo, 8 Cibali	7 Nesima, 8 Rapisardi, 13 San Leone	17 San Giorgio, 9 Librino, 10 Zia Lisa, Villaggio S. Agata, S. G. La Rena			

Figure 3. Articulation of the municipality of Catania in circumscriptions, municipal areas, census divisions (ACEs, census areas).

As for ACE 12, Picanello is the most populous municipal area of Catania (14,438 inhabitants; 17,980 inhabitants/sq.km) and one of the most densely built (Figure 4).

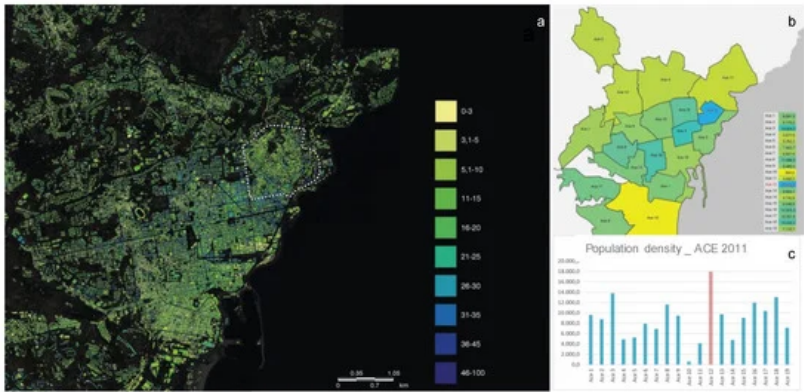


Figure 4. (a) Buildings floors map (source: National Geoportal <http://www.pcn.minambiente.it/viewer/>; (b) population density over all the urban ACEs; (c) comparison of the demographic density in the different ACEs: y-axis inhabitants/sq.km (Our elaboration on National Institute of Statistics).

The urban-scape characterized by an urban fabric, including a wide range of building types, also due to the recent replacement of the original buildings by the contemporary ones and public facilities, sometimes strongly modifying the original settlement arrangement (Figure 5).



Figure 5. (a) Original housing typological patterns ^[7]; (b) original existing housing; (c) contemporary buildings and public facilities in redeveloped urban areas ^[7].

Many social and urban criticalities affect the neighborhood whose complexity and contradictions compensate to each other, thus revealing a significant degree of vitality, as well as outlining positive prospects and opportunities.

References

1. United Nations: Sustainable Development Goals. Available online: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/> (accessed on 28 January 2020).
2. United Nations Department of Economic and Social Affairs (UN-DESA). World Urbanization Prospects; United Nations Department of Economic and Social Affairs: New York, NY, USA, 2014.
3. United Nations Department of Economic and Social Affairs (UN-DESA). World Population Prospects; Key Findings and Advance Tables; United Nations Department of Economic and Social Affairs: New York, NY, USA, 2015.
4. Giuffrida, S. City as Hope. Valuation Science and the Ethics of Capital. Green Energy and Technology; Springer: Berlin/Heidelberg, Germany, 2018; pp. 469–485. ISSN 1865-3529.
5. EC (European Commission). Social Protection Committee Indicators Sub-group EU Social Indicators—Europe 2020 Poverty and Social Exclusion Target. Available online: <http://ec.europa.eu/social/main.jsp?catId=756&langId=en> (accessed on 27 July 2017).
6. National Institute of Statistics, 8milaCensus—ISTAT. Available online: www.ottomilacensus.istat.it (accessed on 13 May 2017).
7. Pagello, E. Architettura minore a Catania all'inizio del secolo: Un caso di studio Picanello; University of Catania: Catania, Italy, 1990.

Retrieved from <https://encyclopedia.pub/entry/history/show/2809>