

The economic impacts of con(temporary) urban regeneration processes: the case of Milan

Leopoldo Sdino¹, Francesca Torrieri¹, Marta Dell'Ovo², Marco Rossitti¹

¹ Department of Architecture, Built Environment, and Construction Engineering, Politecnico di Milano, Italia.

² Department of Architecture and Urban Studies, Politecnico di Milano, Italia.

Primary Contact: Leopoldo Sdino, leopoldo.sdino@polimi.it

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Published: Feb 20, 2025

10.36253/techne-16953

Abstract

Considering the growing importance and widespread adoption of temporary approaches to urban transformations, the paper deals with the open research challenge of understanding the economic impacts of tactical urbanism interventions. Moving from a literature review on the impacts of urban regeneration projects, it proposes an investigation approach from a local economy growth perspective. This approach is applied to the "Piazze Aperte" program, which was implemented by the municipality of Milan in 2018. Its preliminary results return a possible positive contribution of tactical urbanism experiences on the reference neighborhoods' business dynamics. It seems to unfold about the different neighborhoods' specificities and the intervention area's urban morphology.

Keywords: Economic; Impacts; Tactical urbanism; Urban regeneration; Evaluation.

Please cite this article as: Sdino, L., Torrieri, F., Dell'Ovo, M., Rossitti, M. (2025). The economic impacts of con(temporary) urban regeneration processes: the case of Milan. *Techne. Journal of Technology for Architecture and Environment*, Just Accepted.

Introduction

Urban planning has undergone substantial transformation in recent decades, driven by emerging environmental, social, and economic phenomena (Haghani et Al., 2023). These phenomena have redefined the objectives, actors, methods, and tools involved in urban regeneration processes, thus shifting from traditional, hierarchical top-down models toward more flexible, participatory, and integrative approaches (Concilio et al., 2021). The need to address and adapt to the complex challenges posed by contemporary urbanization, including pandemics, climate change, and geopolitical conflicts, has highlighted the growing importance of reuse, reversibility, and temporary interventions in urban regeneration. These approaches help conserve resources and allow for greater flexibility in adapting to changing needs.

This shift aligns with sustainability, resilience, and inclusivity goals (Nijkamp et al., 2023). Sustainable urban planning addresses global challenges like climate change, economic inequality, and social justice by prioritizing adaptive infrastructure reuse to minimize waste and reduce environmental impact. Temporary interventions, such as pop-up parks, open streets, and tactical urbanism projects, enable cities to experiment with innovative solutions before committing to long-term investments while fostering dynamic and people-centered environments. These efforts involve diverse stakeholders, including governments, private sectors, and communities, using innovative tools and methodologies to address urban challenges and ensure resilient, livable cities (Urban Regeneration|UN-Habitat, 2022).

However, ongoing challenges and rapid urbanization require continuous refinement of planning strategies to ensure long-term success.

In this cultural context, tactical urbanism and, more generally, the multiple forms of reuse or temporary use of the existing city can play a role that overcomes the external one of a response to random circumstances but can be planned as a method to face and manage contemporary urban dynamics (Madanipour 2017).

Tactical Urbanism was introduced in North America in the early 2010s through the work of Mike Lydon and Anthony Garcia in their book "Tactical Urbanism: Short-Term Action for Long-Term Change" (2015). They define Tactical Urbanism as "an approach to neighborhood building that uses short-term, low-cost, and scalable interventions and policies to inspire long-term change." This concept builds on earlier practices like DIY Urbanism (Finn, 2014), Guerilla Urbanism (Hou, 2010), and Urban Acupuncture (Lerner, 2014). Governments, nonprofits, community organizations, or residents can spearhead these initiatives.

Starting from the earliest experiences of tactical urbanism, the concept has evolved and spread across various global contexts, adapting to each location's unique social, cultural, and urban challenges. This global proliferation highlights the flexibility and universality of tactical urbanism as a tool for urban regeneration, community engagement, and sustainable development.

In recent years, urban regeneration and tactical urbanism in Europe, particularly in Italy, have emphasized walkability (Speck, 2013) and the development of cycling infrastructure.

A recent study by Gorrini et al. (2023) highlights Bologna as a key example in this area. The Bologna Pedonale project created temporary public spaces and pedestrian pathways to encourage socialization and safe access to urban areas. Key interventions included pedestrianizing central zones and installing temporary infrastructure to reduce traffic and promote active mobility, thereby improving quality of life (Gorrini et al., 2023).

In Palermo's Ballarò district, tactical urbanism addressed urban decay through temporary design interventions, artistic installations, and community engagement. These efforts aimed to revitalize public spaces, reduce social inequalities, and enhance neighborhood safety.

Similarly, Milan advanced walkability and cycling through initiatives like the Ciclovía, a dedicated bike lane network, and the Piazze Aperte project, transforming neglected areas into car-free zones, enhancing pedestrian access, and fostering a bike-friendly environment. Given the growing interest in tactical urbanism interventions, scholars have tried to understand their impacts and their indubitably added value to urban transformations. However, their economic impacts still need to be fully understood and assessed (Cariello et al., 2021; Rossitti et al., 2023). Based on these premises, the study's objective is to evaluate the impact of tactical urbanism interventions on the economic system and the real estate market, aiming to compare the investment costs with the benefits obtained.

At this aim, the present paper explores the economic impact of temporary urbanism intervention, focusing on the case of Milan "Piazze Aperte".

The paper will be structured as follows:

- The first section will examine existing research based on a literature review to highlight the main economic impacts of urban regeneration interventions in the short and long term.
- Based on the literature review findings, the paper proposes an investigation of tactical urbanism's economic impact from an economic growth perspective.
- The third section adopts such a perspective to focus on the "Piazze Aperte" project by analyzing the specific economic outcomes of tactical urbanism experiences in terms of variation of local businesses at the neighborhood scale.
- The final section will summarize the findings, reflect on the implications for future urban planning, and suggest areas for further research.

The economic impacts of urban regeneration projects: a literature review

A literature review has been developed to understand the correlation between the "temporary urbanism" initiatives and the economic impact on an urban environment. Still, since only a few papers discuss the role and influence of temporary urbanism or small-scale interventions, the analysis has been expanded to the broader realm of urban regeneration projects. With the support of the SCOPUS database, the following keywords have been combined: "urban project" OR "urban intervention" OR "urban regeneration" AND "economic impact" OR "economic criteria*" OR "economic effect" OR "economic consequence" limiting the subject areas at Social Sciences; Environmental Science; Engineering; Business; Management and Accounting; Economics, Econometrics, and Finance; Decision Sciences; Multidisciplinary, resulting in 87 papers. After two phases of filtering by Title and Abstract, 48 papers were selected, and then, considering the coherence with the objective of the contribution, 13 were further analyzed. This literature review synthesizes the main findings and analyzes urban regeneration projects' goals, and outcomes, focusing on economic impacts. In addition, the review of the other essential dimensions impacted by the urban projects (i.e., social and environmental implications) and their scalability to a minor scale are explained.

Considering other scholars' experiences, the primary objectives of these initiatives are economic revitalization, cultural enhancement, and sustainable urban development. Papers explore various interventions, from heritage preservation to innovative, creative spaces, by underlying economic and

social goals. Revitalization projects often aim to attract investments and stimulate economic activity within economic development. Pareti and García Henche (2021) discuss how the transformation of the Barrio Matadero-Franklin into a cultural hub leveraged tourism and creative industries to enhance the local economy. Similarly, cultural clusters, such as the case study in Barcelona presented by Zarlenga et al. (2016), facilitate social interaction and innovation, driving economic dynamism. At the same time, the social and cultural integration is highlighted; in fact, the Szczecin's cultural developments (Sochacka and Rzeszotarska-Pałka, 2021) promote social identity and cohesion, demonstrating that cultural initiatives can be powerful tools for placemaking and community building. Moreover, events such as the European Capital of Culture in Liverpool (Liu, 2019) and cross-border cultural programs (Turşie and Perrin, 2020) underline the potential for cultural initiatives to enhance the quality of life and foster economic growth. In addition, environmental sustainability is considered. Ruiz-Pérez et al. (2019) propose the HERVEEA tool to evaluate urban projects' ecological and economic impacts, emphasizing the need for sustainable planning in housing and infrastructure. Fig. 01 shows the most important keywords from the literature review and their correlation.

Focusing more on the economic dynamics, three main outputs can be underlined: implications for local economies, property values, and long-term growth. Urban improvements often raise the desirability of neighborhoods, driving property value increases. Devaux et al. (2018) quantified how heritage policies boosted property values in Quebec's historic districts. Also, linear parks like Gyeongui Line Forest Park in Seoul positively affected property prices and local businesses (Park and Kim, 2019). With concerns about the impact on local economies, Booth and O'Connor (2018) describe how cultural hubs, like the Museum of Old and New Art in Australia, acted as economic magnets, attracting tourism and creating employment opportunities. Other examples include festivals and events, conceived as economic drivers that increase local revenues and tourism (Devesa et al., 2012). On the contrary, these economic dynamics could generate negative impacts and risks, and gentrification is a recurring concern. Projects that elevate property values and attract wealthier demographics can displace long-standing residents (Trillo, 2017; Tarazona Vento, 2017). The principles of large-scale regeneration projects can be scaled down and adapted to minor projects and temporary interventions, which are more agile and cost-effective. Rossitti et al. (2023) explain how tactical urbanism enhances urban livability and stimulates local economies in a low-cost manner. Moreover, smaller initiatives can directly engage local communities, foster inclusivity, and minimize displacement risks, providing a framework for participatory urban planning.

Urban regeneration projects profoundly reshape cities, yielding economic, social, and environmental benefits. However, their outcomes are context-dependent, often marked by trade-offs such as economic revitalization at the expense of social equity. Scaling down these principles to tactical and temporary urbanism provides a promising path for inclusive and sustainable development.

Assessing the economic impacts of temporary urbanism: towards a local economy growth lens

The implemented literature review reveals that understanding the economic impacts of temporary urbanism is still an open research challenge. The focus on the broader realm of urban regeneration projects, instead, reveals three main interpretative dimensions that can be assumed as a reference for assessing the economic impacts of urban regeneration interventions:

- real estate market dynamics are intended to be the variation in the market and rent value of the properties located near the interventions;
- the growth of the local economy, which can be interpreted as the birth of new business activities and the setting up of new entrepreneurial ventures in urban contexts;
- tourism growth can be interpreted as an increased capacity to attract and host new tourists.

Among these dimensions, the growth of the local economy represents the most interesting one to read about the economic impacts of tactical and temporary urbanism interventions that, given their nature of small-scale and minimum intervention approach to urban transformation, struggle to influence the neighborhood scale.

Case study analysis: the “Piazze Aperte” program in Milan

Prologue

The willingness to understand if and how tactical urbanism interventions can generate economic impacts in their reference territorial context can benefit from dealing with a case study where these approaches have found wide application.

From this perspective, Milan municipality emerges as an appropriate observation field for research purposes. Indeed, in 2018, Milan municipality launched the “Piazze Aperte” (Open Square) program, aimed at enhancing neglected public spaces to foster community interaction and connection within neighborhoods through tactical urbanism techniques (Comune di Milano, 2024). This program, after an initial testing phase, was relaunched in 2019 with the call “Piazze Aperte in ogni quartiere” (Open Squares in Every Neighborhood) and again in 2022 with the call “Piazze Aperte per ogni scuola” (Open Squares for Every School). To date, it has led to the implementation of 52 interventions that, initially temporary to test local communities’ response, have, in most cases, been made permanent, thus returning more than 56.000 sqm of public spaces to the city. Furthermore, the suitability of the “Piazze Aperte” program as an “economic impact” case in terms of real estate market dynamics has already been investigated (Rossitti et al., 2023). The analysis revealed a “weak” influence between these interventions and property prices, thus suggesting the need for other metrics to understand their possible economic impacts.

Investigating the economic impacts of the “Piazze Aperte” Program: a local economy growth perspective

A local economy growth perspective requires identifying a proxy to express local economy growth dynamics at a sub-municipal level. As suggested from the literature, this proxy for specific research purposes can be identified in the variation of the number of local businesses¹ as the type of commercial activity best suiting the neighborhood scale. The analysis is extended to the 38 tactical urbanism interventions from the “Piazze Aperte” program completed between 2018 and 2021 (Fig. 3). The remaining 14 most recent interventions are excluded from this analysis due to the insufficient timing for evaluating, even partially, their effects.

It is carried out in two phases:

1. A former phase, at the neighborhood level, that, according to the Milan municipality plan, is identified by the “Nucleus of Local Identity” (NIL). The variation in the number of local businesses for each NIL interested in a tactical urbanism initiative between January 2021 and June 2024 is

compared with the average variation at the municipal level and with the same variation in NILs not affected by tactical urbanism experiences.

2. A latter phase, based on defining an influence area with a radius of 500 meters for each tactical urbanism intervention. The variation in the number of local businesses in these influence areas between 2021 and 2024 is compared to the average variation at the NIL level, thus attempting to capture the tactical urbanism's specific contribution to the economic growth in the reference neighborhood.

The reference data are retrieved from Lombardy Region's "Neighborhood Business Registry" (Regione Lombardia, 2024), while data about tactical urbanism interventions are retrieved from Milan municipality's website (Comune di Milano, 2024). Regarding the choice of January 2021 as the temporal reference for the analysis variation, it rests on the assumption that, given the COVID-19 pandemic, all the new business openings, even where interventions were carried out previously, have been recorded after this date.

Results

The two phases-analysis of the relationship between tactical urbanism experiences and the increase in local businesses between 2021 and 2024, based on elaborating and processing the input data through the software "QGis", returns several insights to discuss these temporary interventions' possible economic impacts. Starting the analysis at the NIL scale does not return to a strong correlation between the variation in local businesses and the implementation of tactical urbanism interventions (Tab. 1). Only 6 out of 26 is characterized by the presence of at least one intervention, the variation in the number of local businesses between 2021 and 2024 is higher than the corresponding value for the whole municipality (16,3%). However, the spatial display of this relationship provides a more enjoyable reading of the phenomenon: semi-peripheral and peripheral NILs interested in tactical urbanism seem to show better economic growth dynamics than the other NILs (Fig. 3).

Narrowing the analysis to the NILs affected by the interventions and comparing the variation of local businesses in the tactical urbanism experiences' influence areas and the average value for the NILs provides more interesting results. Indeed, in 45% (17 out of 38) of the cases, the interventions' influence areas are affected by more robust growth in local businesses, thus hinting at their positive contribution to the economic vitality of the region (Fig. 4). The detailed reading of the results, furthermore, reveals that this "positive" results mainly occur about interventions shaping a public space with a pivotal position in the mobility system, thus hinting at an urban morphological reading of these interventions' impact. Finally, it is interesting to notice that "not positive" results from the comparison are mainly related to the most recent tactical urbanism initiatives (dating 2020 and 2021). This result needs to be deepened and monitored to understand if the emergence of the impacts of the experiences on local business dynamics requires a specific period for maturation.

Discussion and Conclusions

In recent decades, new social, economic, and environmental challenges have led urban planning to dramatically innovate its objectives and approaches by conceiving transformative interventions from a perspective of adaptation and rapid response. In this context, tactical and temporary urbanism

interventions have found significant application in urban regeneration processes and have gained increasing attention from the scholarly debate. The minimum intervention and community-oriented perspective behind this intervention has led the scientific discussion to explore the social and environmental benefits of these interventions, while understanding their economic impact still represents an open challenge.

From this perspective, the research addresses this challenge by reading tactical and temporary urbanism experiences' economic impacts from an economic growth perspective. The focus on Milan municipality, based on exploring the relationship between tactical urbanism initiatives and the variation in local businesses in their influence area, hints at their positive effects in triggering growth dynamics at the neighborhood scale. Coherently with the existing literature on the impacts of urban regeneration initiatives, these results cannot be generalized to the entire urban environment but seem to be affected by context-based factors and by the morphological nature of the intervention.

For this reason, the paper's findings must be interpreted as a preliminary insight into the theme of tactical urbanism's economic impacts, which needs further exploration and questioning. To this aim, future research perspectives will be oriented to integrate the provided information layer about the supply of local businesses with an analysis of the demand for these activities and its relationship with the tactical urbanism interventions. Furthermore, approaching the "demand" side will allow both to better investigate the social consequences of the emerging economic growth dynamics, thus critically questioning these small-scale interventions' role in triggering a socially responsible urban development.

Notes

¹ According to the D. Lgs. 31 March 1998, n. 114, the local business refers to a retail activity with a sales area not exceeding 150 sqm in municipalities with a population lower than 10.000 residents and not exceeding 250 sqm in municipalities with a population higher than 10.000 residents.

References

- Haghani, M. Sabri, S., De Gruyter C., Ardeshiri, A., Shahhoseini, Z. Sanchez, T.W. and Acuto M. (2023) "The landscape and evolution of urban planning science", *Cities*, Volume 136, Article , 104261, <https://doi.org/10.1016/j.cities.2023.104261>.
- Booth, K., & O'Connor, J. (2018). "Planning for creative effects: the Museum of Old and New Art", *Australian Planner*, 55(2), 65-72.
- Comune di Milano (2024), *Piazze aperte*. Available at: <https://www.comune.milano.it/aree-tematiche/quartieri/piano-quartieri/piazze-aperte> (Accessed 29/11/2024).
- Concilio G., Medina T., Tosoni I. (2021), *Design enabled Innovation in Urban Environments a handbook*, Planum Publisher, Roma-Milano. ISBN 9788899237370.
- Devaux, N., Berthold, E., & Dube, J. (2018). "Economic impact of a heritage policy on residential property values in a historic district context: The case of the old city of Quebec", *Review of Regional Studies*, 48(3), 279-297.
- Devesa, M., Baez, A., Figueroa, V., & Herrero, L. C. (2012). "Economic and social impacts of cultural festivals. The case study of the Valdivia International Film Festival", *EURE-REVISTA LATINOAMERICANA DE ESTUDIOS URBANO REGIONALES*, 38(115), 95-115.
- Finn, D. (2014). "DIY urbanism: implications for cities. *Journal of Urbanism: International Research*

- On Placemaking and Urban Sustainability*, 7(4), 3 <https://doi.org/10.1080/17549175.2014.891149>.
- Hou, J. (2010) *Insurgent Public Space: Guerrilla Urbanism and the Remaking of Contemporary Cities*, Routledge. ISBN: 9780415779661
- Lerner J. (2014). *Urban Acupuncture*, Island Press Washington, DC, <https://doi.org/10.5822/978-1-61091-584-7>
- Fusco Girard L., Kourtit K. Nijkamp P., (2023) *The future of liveable cities*, Springer Cham.
- UN-Habitat, (2022), *World Cities Report*, Available at https://unhabitat.org/sites/default/files/2022/06/wcr_2022.pdf.
- Gorriani, A., Presicce D., Messa, F., Choubassi R. (2023) "Walkability for children in Bologna: Beyond the 15-minute city framework", *Journal of Urban Mobility*, Volume 3, 100052, SSN 2667-0917, <https://doi.org/10.1016/j.urbmob.2023.100052>.
- Speck, J. (2012) *Walkable City: How Downtown Can Save America, One Step at a Time* Nova York: North Point Press, 312 p. ISBN 978-0865477728. <https://doi.org/10.5565/rev/dag.274>
- Liu, Y. D. (2019). "Event and sustainable culture-led regeneration: Lessons from the 2008 European Capital of Culture, Liverpool", *Sustainability*, 11(7), 1869.
- Lydon, M.; Garcia, A. (2015) *Tactical Urbanism. Short-Term Action for Long-Term Change*; Island Press: Washington, DC, USA. <https://doi.org/10.5822/978-1-61091-567-0>.
- Madanipour, A. (2018). *Temporary use of space: Urban processes between flexibility, opportunity and precarity*. *Urban Studies*, 55(5), 1093-1110. <https://doi.org/10.1177/0042098017705546>
- Cariello, A., Ferorelli, R., & Rotondo, F. (2021). Tactical Urbanism in Italy: From Grassroots to Institutional Tool—Assessing Value of Public Space Experiments. *Sustainability*, 13(20), 11482. <https://doi.org/10.3390/su132011482>
- Pareti, S., & García Henche, B. (2021). "Matadero-franklin, from popular market to artistic-cultural district. Conservation and capitalization, through creative tourism and co-creation", *ACE: architecture, city and environment*, 15(45).
- Park, J., & Kim, J. (2019). "Economic impacts of a linear urban park on local businesses: The case of Gyeongui Line Forest Park in Seoul", *Landscape and Urban Planning*, 181, 139-147.
- Regione Lombardia (2024), *Anagrafica esercizi di vicinato*. Available at: https://www.dati.lombardia.it/Commercio/Anagrafica-Esercizi-di-Vicinato/mtva-9hrb/about_data (Accessed on 30/11/2024).
- Rossitti, M., Oppio, A., Torrieri, F., & Dell'Ovo, M. (2023). "Tactical Urbanism Interventions for the Urban Environment: Which Economic Impacts?", *Land*, 12(7), 1457.
- Ruiz-Pérez, M. R., Alba-Rodríguez, M. D., Castaño-Rosa, R., Solís-Guzmán, J., & Marrero, M. (2019). "HEREVEA tool for economic and environmental impact evaluation for sustainable planning policy in housing renovation", *Sustainability*, 11(10), 2852.
- Sochacka, E., & Rzeszotarska-Pałka, M. (2021). "Social Perception and Urbanscape Identity of Flagship Cultural Developments in Szczecin (in the Re-Urbanization Context)", *Land* 2021, 10, 398.
- Tarazona Vento, A. (2017). "Mega-project meltdown: Post-politics, neoliberal urban regeneration and Valencia's fiscal crisis", *Urban Studies*, 54(1), 68-84.
- Trillo, C. (2017). "International property marketdriven regeneration: A challenge to sustainable urban development?", *Journal of Urban Regeneration & Renewal*, 10(4), 369-378.
- Turşie, C., & Perrin, T. (2020). "Assessing the social and cultural impacts of the European Capital of Culture programme in cross-border regions. A research agenda", *Eastern Journal of European*

Studies, 11(Special Issue), 77.

Urban Regeneration|UN-Habitat. Available online: <https://unhabitat.org/topic/urban-regeneration> (accessed on 15 December 2022).

Zarlenga, M. I., Ulldemolins, J. R., & Morató, A. R. (2016). "Cultural clusters and social interaction dynamics: The case of Barcelona", *European Urban and Regional Studies*, 23(3), 422-440.

Images

Fig. 01

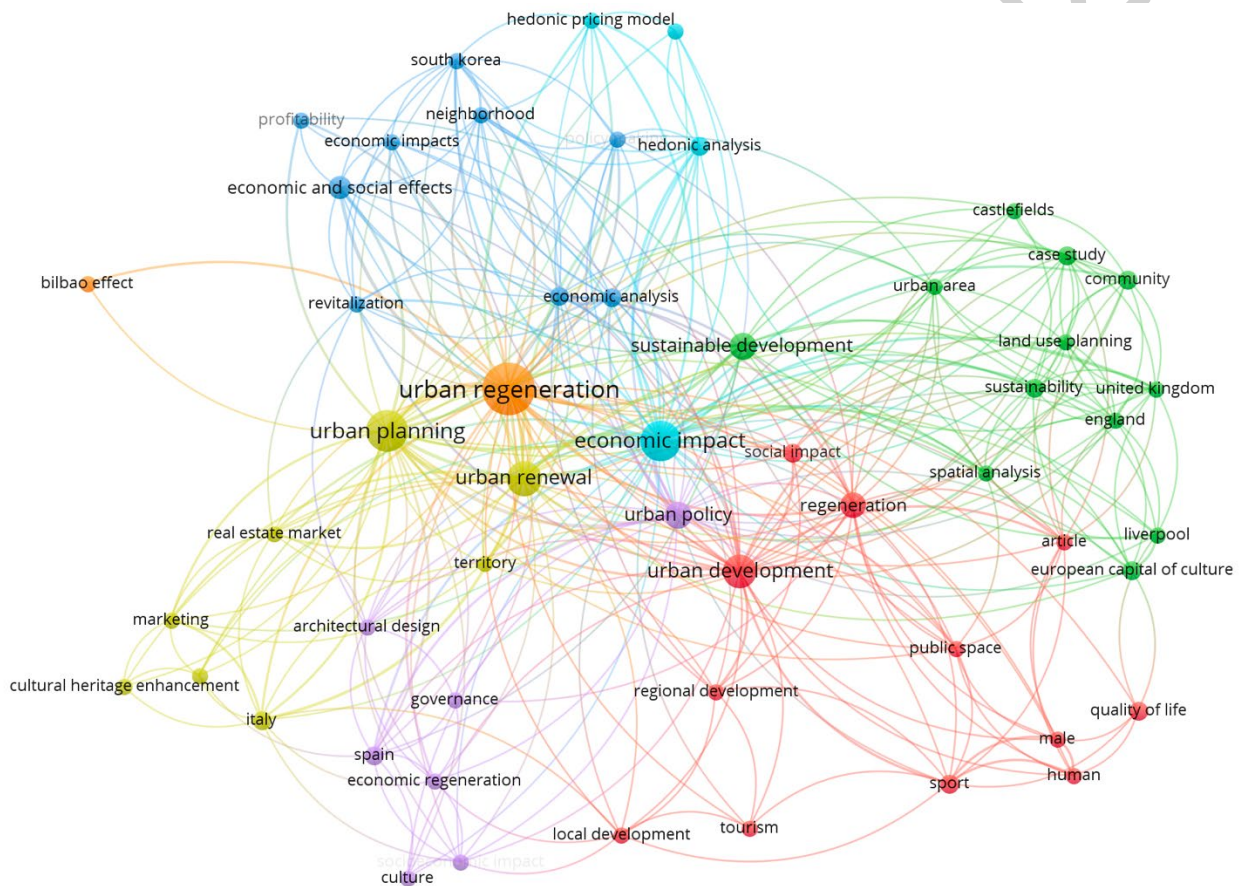


Fig. 02

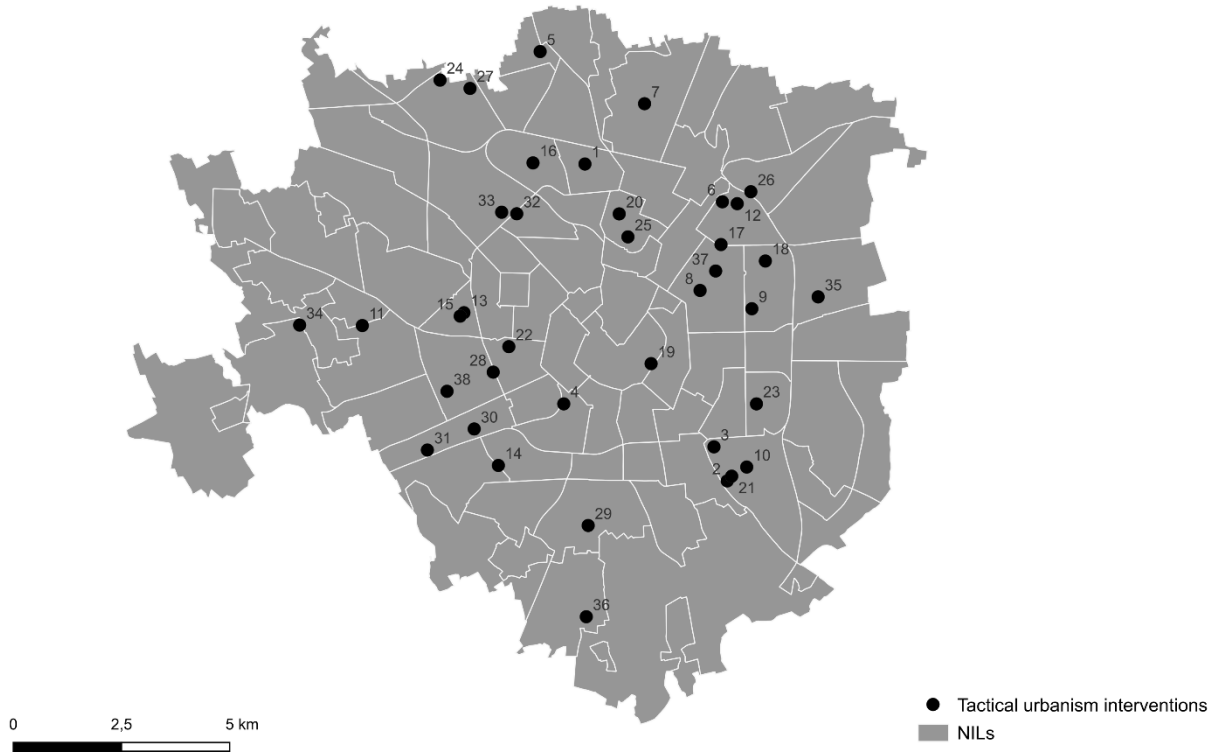


Fig. 03

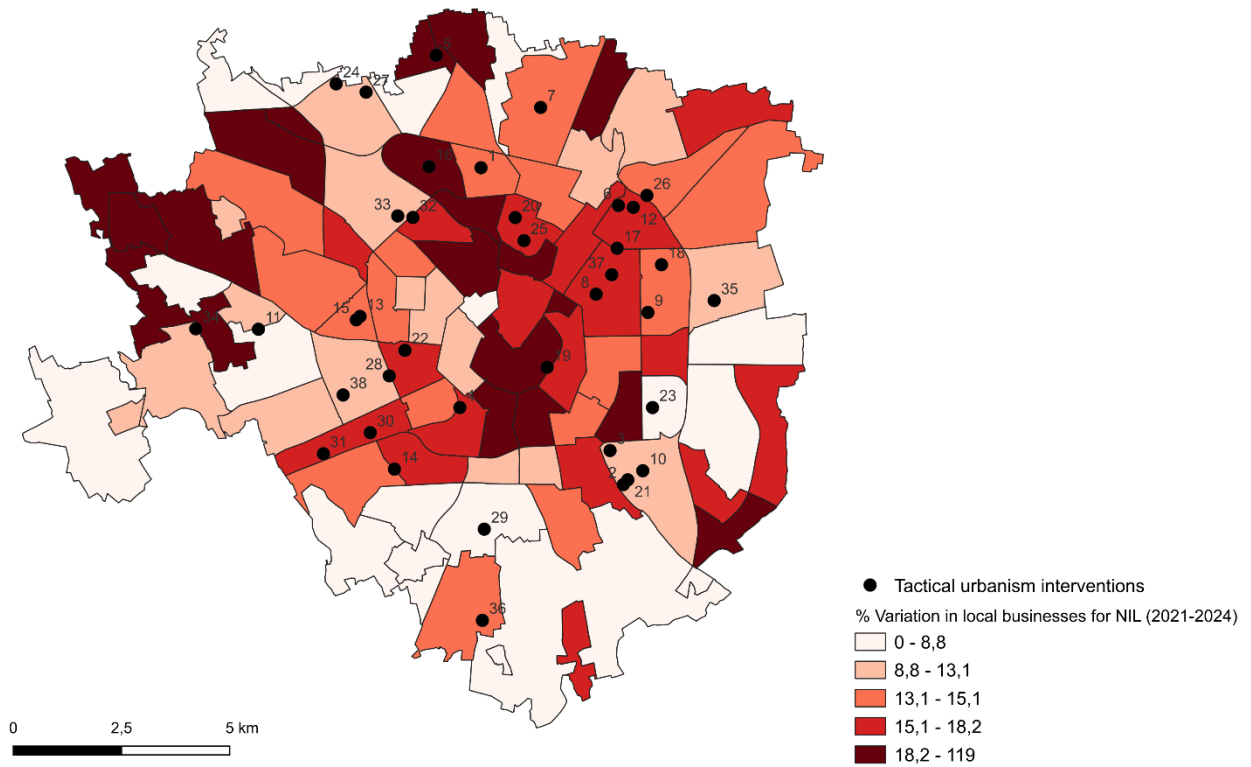
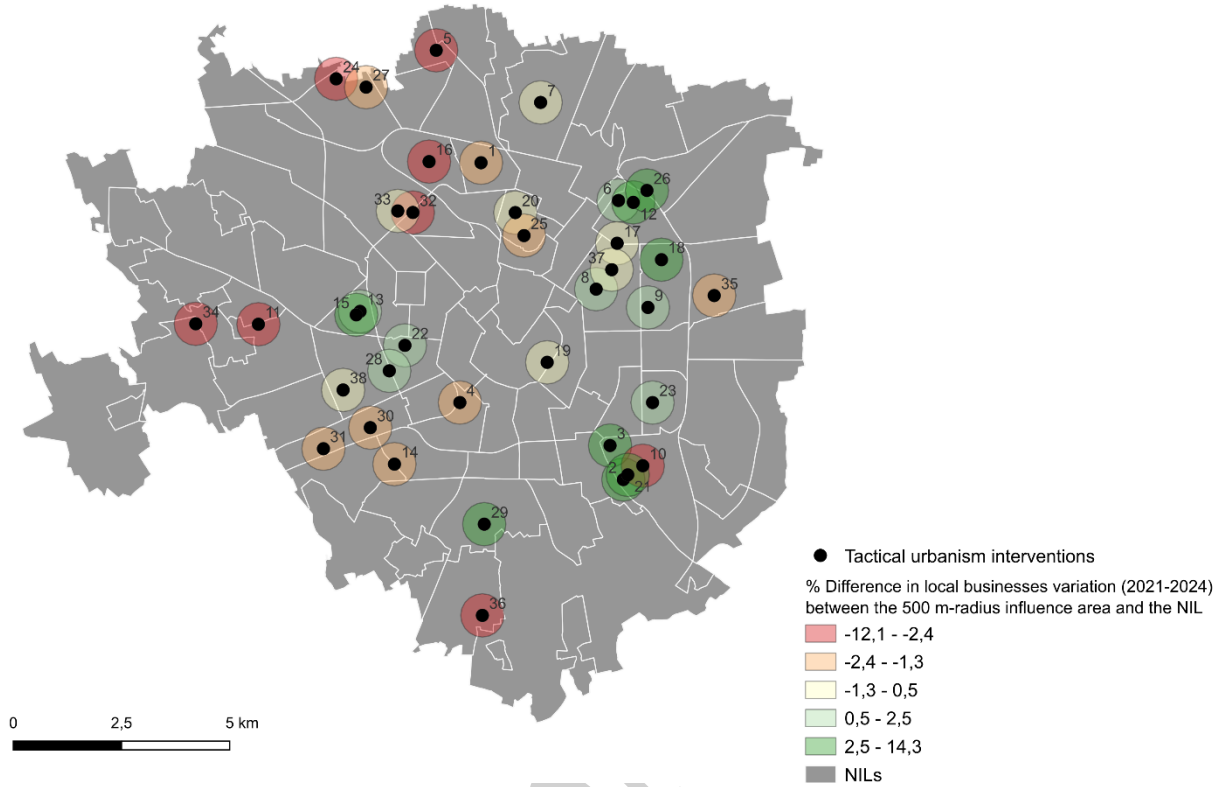


Fig. 04



Tab. 01

COD_NIL	DEN_NIL	Local businesses 2021	Local businesses 2024	Var % Local businesses (2020-2024)	No of tactical urbanism Interventions
1	Duomo	2.515	2.990	18,9%*	1
2	Brera	1.199	1.405	17,2%	0
3	Giardini Porta Venezia	3	4	33,3%	0
4	Guastalla	613	722	17,8%	0
5	Vigentina	262	318	21,4%	0
6	Ticinese	757	896	18,4%	0
7	Magenta - San Vittore	471	532	13,0%	0
8	Parco Sempione	2	2	0,0%	0
9	Garibaldi Repubblica	287	348	21,3%	0
10	Centrale	587	690	17,5%	0
11	Isola	583	675	15,8%	2
12	Maciachini - Magliolina	265	305	15,1%	0

COD_NIL	DEN_NIL	Local businesses 2021	Local businesses 2024	Var % Local businesses (2020-2024)	No of tactical urbanism Interventions
13	Greco	143	161	12,6%	0
14	Niguarda - Ca' Granda	293	332	13,3%	1
15	Bicocca	110	133	20,9%	0
16	Viale Monza	280	309	10,4%	0
17	Adriano	86	101	17,4%	0
18	Parco Lambro - Cimiano	173	196	13,3%	0
19	Padova	524	602	14,9%	1
20	Loreto	827	959	16,0%	3
21	Buenos Aires - Venezia	1.904	2.246	18,0%*	2
22	Città Studi	625	707	13,1%	2
23	Lambrate	140	153	9,3%	1
24	Parco Forlanini - Ortica	24	25	4,2%	0
25	Corsica	321	375	16,8%	0
26	XXII Marzo	786	890	13,2%	0
27	Porta Romana	488	555	13,7%	0
28	Umbria - Molise	274	332	21,2%	0
29	Ortomercato	88	95	8,0%	1
30	Mecenate	180	191	6,1%	0
31	Parco Monluè - Ponte Lambro	33	39	18,2%	0
32	Triulzo Superiore	15	18	20,0%	0
33	Rogoredo	56	66	17,9%	0
34	Chiaravalle	0	0	0,0%	0
35	Lodi - Corvetto	487	548	12,5%	4
36	Scalo Romana	133	155	16,5%	0
37	Ex OM - Morivione	76	85	11,8%	0
38	Ripamonti	138	157	13,8%	0
39	Quintosole	11	13	18,2%	0
40	Ronchetto delle Rane	0	0	0,0%	0
41	Gratosoglio - Ticinello	105	119	13,3%	1
42	Stadera	292	317	8,6%	1

COD_NIL	DEN_NIL	Local businesses 2021	Local businesses 2024	Var % Local businesses (2020-2024)	No of tactical urbanism Interventions
43	Tibaldi	145	158	9,0%	0
44	Navigli	493	570	15,6%	1
45	San Cristoforo	193	227	17,6%*	1
46	Barona	57	61	7,0%	0
47	Cantalupa	14	14	0,0%	0
48	Ronchetto sul Naviglio	101	115	13,9%	0
49	Giambellino	437	504	15,3%	2
50	Tortona	357	404	13,2%	0
51	Washington	453	523	15,5%	1
52	Bande Nere	516	577	11,8%	2
53	Lorenteggio	102	112	9,8%	0
54	Muggiano	8	9	12,5%	0
55	Baggio	232	260	12,1%	1
56	Forze Armate	144	156	8,3%	1
57	Selinunte	355	403	13,5%	2
58	De Angeli - Monte Rosa	398	455	14,3%	0
59	Tre Torri	55	62	12,7%	0
60	San Siro	69	79	14,5%	0
61	Quarto Cagnino	70	77	10,0%	0
62	Quinto Romano	40	42	5,0%	0
63	Figino	10	13	30,0%	0
64	Trenno	23	26	13,0%	0
65	Gallaratese	126	145	15,1%	0
66	QT 8	18	21	16,7%	0
67	Portello	123	140	13,8%	0
68	Pagano	358	403	12,6%	0
69	Sarpi	967	1.191	23,2%	0
70	Ghisolfa	252	296	17,5%*	1
71	Villapizzone	608	686	12,8%	1
72	Maggiore - Musocco	126	276	119,0%	0

COD_NIL	DEN_NIL	Local businesses 2021	Local businesses 2024	Var % Local businesses (2020-2024)	No of tactical urbanism Interventions
73	Cascina Triulza - Expo	1	1	0,0%	0
74	Sacco	7	7	0,0%	0
75	Stephenson	8	11	37,5%	0
76	Quarto Oggiaro	186	204	9,7%	2
77	Bovisa	236	281	19,1%*	1
78	Farini	51	62	21,6%	0
79	Dergano	278	319	14,7%	1
80	Affori	237	269	13,5%	0
81	Bovisasca	35	38	8,6%	0
82	Comasina	45	55	22,2%*	1
83	Bruzzano	67	81	20,9%	0
84	Parco Nord	7	7	0,0%	0
85	Parco delle Abbazie	10	10	0,0%	0
86	Parco dei Navigli	2	2	0,0%	0
87	Parco Agricolo Sud	3	3	0,0%	0
88	Parco Bosco in Città	9	13	44,4%	0
-	MILAN MUNICIPALITY	24.188	28.134	16,3%	38

Captions

Fig. 01 – Keywords co-occurrences network analysis (Authors' elaboration through VOSviewer software)

Fig. 02 – Tactical urbanism interventions implemented between 2018 and 2021 within the “Piazze Aperte Program” (Authors' elaboration on ISTAT's territorial basis and Milan Municipality's data)

Fig. 03 - Percentage variation of local businesses per NIL between 2021 and 2024 (Author's elaboration on ISTAT's territorial basis, Milan Municipality's data, and Lombardy Region's Open data)

Fig. 04 - Percentage difference in the variation of local business (2021-2024) between the 500-m radius influence area of the intervention and the reference NIL (Author's elaboration on ISTAT's territorial basis, Milan Municipality's data, and Lombardy Region's Open data)

Tab. 01 - Percentage variation of local businesses (2021-2024) and number of tactical urbanism interventions per NIL