Pathways to Urban Resilience: Tactical Urbanism vs. Transdisciplinary Approaches

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**Abstract**

This article examines the challenges of urban sustainability and resilience in Türkiye, highlighting the limitations of top-down governance and the need for more inclusive urban planning. Tactical urbanism offers rapid, low-cost, and community-focused short-term interventions. Conversely, transdisciplinary approaches aim for holistic, long-term, and structural solutions, encompassing diverse disciplines and stakeholders. Current applications in Türkiye encounter difficulties such as a centralized management structure and limited integration. While recent shifts towards participatory practices show promise, they remain insufficient without deeper integration of transdisciplinary approaches. The enhancement of urban resilience can be facilitated by a holistic and collaborative framework that engages diverse stakeholders, incorporates local knowledge, and fosters democratic participation. Both approaches are emphasized for empowering communities and making cities resilient.Their combined use can provide more inclusive and effective solutions by integrating local knowledge and expertise, thereby supporting long-term urban resilience.

**Keywords:** Urban governance, climate change, resilience, Türkiye

**1. Introduction**

Derived from the Latin word “resilientia,” resilience is the capacity of a substance to return to its initial state following deformation. This was defined in the 19th century by Thomas Young and Thomas Tredgold as the capacity of a material to absorb energy and withstand abrupt force. Furthermore, they created phrases such as “modulus of resilience” (Rogers, 2017, p. 14). Resilience is “a measure of the ability of these systems to absorb changes of state variables, driving variables, and parameters, and still persist. In this definition, resilience is the property of the system and persistence or probability of extinction is the result” (Holling, 1973, p. 17). It is “the capacity of a system to absorb disturbance and reorganize while undergoing change…” (Walker et al., 2004). Resilience refers to the time it takes for a system to return to equilibrium after a disturbance event, often referred to as engineering resilience. It also encompasses dynamics far from equilibrium steady states, referring to the amount of disturbance a system can withstand before transitioning to a different stable regime governed by different variables and structures. The terms ecological resilience and ecosystem resilience are often used interchangeably (Brand and Kurt, 2007).

Urban resilience is defined as the capacity of cities to generate opportunities for adaptation to predictable changes and novel conditions, including population growth, resource scarcity, and climate change. Urban resilience planning is crucial for cities to prepare for unexpected shifts (Yaman Galantini, 2020, p. 349). Two fundamental issues are pivotal to this process. Firstly, a city's capacity to cope with change must be enhanced while maintaining stability. Secondly, it is crucial to acknowledge that resilience strategies must be tailored to suit the distinct characteristics of each city, as the repercussions of global challenges manifest differently at the local level. Given the evolving nature of resilience, it is essential for cities to periodically reassess their objectives and capabilities. An effective resilience plan must address three fundamental questions: first, what the immediate vulnerabilities are; second, what the spatial scales for intervention are; and third, what the key components of the planning framework are. These components include stakeholders, spatial scale, interdependencies, resilience indicators, planning tools, and policies (Yaman Galantini, 2020, pp. 348-349).

**1.1. Urban resilience**

**“**The Urban Resilience Hub”, managed by UN-Habitat, is a global platform that enhances urban resilience and promotes its implementation. It provides access to research, news, case studies, and best practices on urban resilience, fostering collaboration among local governments, practitioners, researchers, and international organisations. The hub offers materials, toolkits, and guidance documents to help cities assess risks and implement resilience actions. It advocates for the integration of resilience thinking into urban planning and policy at local, national, and global levels. The hub also facilitates city alignment with global frameworks like the Sendai Framework for Disaster Risk Reduction, the Paris Agreement, and the Sustainable Development Goals (Urban Resilience Hub (n.d.)). “Making Cities Resilient 2030” (MCR2030) is a global initiative led by the United Nations Office for Disaster Risk Reduction (UNDRR) that helps cities become safer, more inclusive, and resilient to disasters and climate, aiming to enhance urban resilience at local levels by 2030, aiming to make cities inclusive, safe, resilient, and sustainable. It contributes to achieving Sustainable Development Goal 11 (SDG11) and other global frameworks including the Sendai Framework for Disaster Risk Reduction, the Paris Agreement and the New Urban Agenda by advocating, sharing knowledge, establishing learning networks, injecting technical expertise, connecting government layers, and building partnerships (Making Cities Resilient (MCR2030)).

Another initiative on urban resilience is the “New European Bauhaus,” launched by European Commission in 2020 to promote sustainable, inclusive, and human-centered urban living. Drawing inspiration from the original Bauhaus movement, the program connects the European Green Deal to everyday life and emphasizes long-term thinking within industrial ecosystems. It focuses on sustainability, aesthetics, and inclusivity, supporting climate goals and involving communities at the grassroots level. The program emphasizes neighbourhood development, social inclusion, and competitiveness. Initiatives include commission- and community-led projects, demonstrating a commitment to inclusive and participatory approaches (New European Bauhaus (n.d.).

A related strategy for enhancing urban resilience involves the implementation of tactical urbanism. Recent initiatives aimed at incorporating participatory models and tactical urbanism have exposed both progress and ongoing systemic challenges. While these shifts aim to democratise the process of decision-making and enhance resilience, their effectiveness is constrained by fragmented implementation and limited transdisciplinary integration.

In the context of Türkiye, the multi-faceted adaptation of urban open spaces is of great importance in increasing urban resilience and adaptation to emerging climate conditions. Conventional top-down strategies have historically dominated urban planning in Türkiye. However, recent shifts towards participatory practices and project-based policies have aimed to involve citizens in decision-making processes. Nevertheless, these participatory models have been demonstrated to be inadequate in effectively addressing the issue of urban resilience. A salient issue pertains to the sustainability of urban governance, the nascent implementation of participatory processes and democratic active participation, and the challenges encountered at the nexus of top-down policies and grassroots movements.

Conversely, the capacity for transdisciplinary collaboration and research to enable the management of uncertainties, adaptation to various forms of resilience, and development in the face of emerging challenges, thereby enhancing urban resilience, is significant. In addressing the emerging issues of urban sustainability and resilience, architects, planners, and researchers must receive training and experience in knowledge transfer. Design research must be recognised as a legitimate method of knowledge generation (Després et al., 2011). In this capacity, planners can assume a pivotal role in this transformation by fostering awareness among local governments and citizens, thereby exerting a significant influence on the outcome of these activities. Consequently, this research focuses on strategies for implementing transdisciplinary approaches to achieving urban resilience. The article explores the role of participatory processes in fostering urban resilience, as well as the means to enhance transdisciplinary urban participation in Turkish urban contexts through a theoretical framework.

**1.2. Tactical uUrbanism as a catalyst for active participation**

Historically, citizens have modified streets and public spaces-sometimes without government permission – to address unmet needs, such as improving street safety or creating more open space.  This is an initiative that has been established and is being led by members of the general public. The concept of tactical urbanism emerged from the initiative of local residents and activists who sought to implement swift and incremental improvements within their communities. This endeavour was driven by the recognition of deficiencies or delays in official action, particularly in areas where municipal authorities were perceived to be either ineffectual or unresponsive (Grassroots Beginnings). Inspiration for this project has been drawn from earlier urban experiments, including Paris's pop-up book stalls (*les bouquinistes*) in the 16th century, Ciclovía in Bogotá, and pedestrian plazas in New York City (Lydon and Garcia, 2015, p. 51). The concept of tactical urbanism has emerged as a response to the limitations of conventional urban planning methodologies. The notion of tactical urbanism can be traced back to the seminal work of French philosopher Michel de Certeau. In his seminal 1984 publication, *The Practice of Everyday Life*, De Certeau contrasted the tactical actions undertaken by ordinary individuals with the strategic actions employed by institutions, thereby offering a unique perspective on social dynamics and the role of the individual in the urban environment (De Certeau, 1984). De Certeau developed the concept of “making do” as a tactical approach employed by the urban masses, which he termed “invisible.” For de Certeau, this tactic corresponds to and allows for an “art of the weak,” a mode of momentarily subverting the hegemonic authority that defines the spaces—real and immaterial—in which we operate. Tactics have been demonstrated to be a structural effect of social orders, being both contingent and “ageless” (Copeland and Feldman, 2016).

Tactical urbanism has been defined as a “decentralized, bottom-up, extraordinarily agile, networked” “citizen-led, quick, and affordable way" of urban planning with “low-cost, and low-tech” approach (Mohankumar, 2020, p. 15; Lydon and Garcia, 2015, p. xii).  The approach is defined by the use of "short-term, low-cost, and scalable interventions as a way to catalyse long-term change" (Mohankumar, 2020, p. 15). The concept of tactical urbanism emerged as a grassroots response to the sluggish, bureaucratic pace of conventional urban planning. This response took the form of initiatives such as pop-up bike lanes, parklets, and temporary plazas, to catalyse long-term change in neighbourhoods and public spaces (Lydon, 2011; Tactical Urbanist's Guide (n.d.); Urban Design Lab, 2023). This phenomenon gained widespread traction during the 2008 financial crisis, when cities confronted substantial budgetary limitations and sought cost-effective, community-driven strategies to revitalise urban areas. However, it was not until a 2010 meeting of the Next Generation of New Urbanist (CNU NextGen) group in New Orleans that the movement formally came into existence. This meeting was convened by urban planner Mike Lydon, who, along with Anthony Garcia, authored the influential book *Tactical Urbanism: Short-term Action for Long-term Change* (Lydon and Garcia, 2015; Planetizen (n.d.)), which resulted in collaborative open-source projects and widespread adoption of the approach. Lydon and Garcia's reports (Lydon and Garcia, 2015; Lydon et al., 2012) were produced by convening urbanists and activists from across the US to share their experiences of “guerrilla urbanism,” pop-up, ad hoc, “DIY urbanism,” “planning-by-doing,” “urban acupuncture,” and “urban prototyping,” or open source initiatives. The reports were used to establish the salience and accuracy of tactical urbanism to describe their popularity and potential. In the late 2010s, tactical urbanism gained significant traction as city governments and grassroots organisations adopted temporary solutions to address pressing urban challenges. These solutions encompassed the implementation of pop-up parks, pedestrian plazas, and street murals, among others. This period also witnessed the experimentation with novel concepts for public space, as well as the exploration of alternative uses for streets, such as street art and community-led urban farming initiatives. This approach is characterised by an informal, hands-on, and experimental nature to enhance public spaces and facilitate the evaluation of novel concepts before the implementation of permanent alterations (Tactical Urbanist’s Guide (n.d.); Anderson, 2023).

*The Street Plans Collaborative* (2012) define tactical urbanism as an approach to urban change that features the following five characteristics:

* A deliberate, phased approach to instigating change;
* An offering of local ideas for local planning challenges;
* Short-term commitment and realistic expectations;
* Low-risks, with a possibly a high reward; and
* The development of social capital between citizens, and the building of organisational capacity between public/private institutions, non-profit/NGOs, and their constituents (Lydon, Bartman, Garcia, Preston, and Woudstra, 2012, pp. 1-2).

**1.2.1. The Role of Tactical Urbanism in Urban Resilience**

Lydon and Garcia establish a correlation between tactical urbanism and broader urban planning movements, including citizen participation, underscoring the importance of engaging residents in community shaping. They also advocate for open-source urbanism, which facilitates the dissemination of ideas and designs, fostering collaborative problem-solving (Lydon and Garcia, 2015). Tactical urbanism projects are defined by their experimental nature and adaptability, facilitating expeditious testing and prompt feedback from the community. The global pandemic has increased the popularity of this approach (Lowe et al., 2024). These modest, cost-effective initiatives address the needs of local communities and have the potential to engender substantial changes in the realm of creative placemaking. These initiatives empower communities to experiment with novel concepts and establish a sense of proprietorship over their environs, frequently spearheaded by local inhabitants (CoUrbanize, 2020). The application of tactical urbanism has been demonstrated to enhance adaptability, social cohesion, and environmental sustainability through community-led interventions such as pop-up parks and street murals (Mohankumar, 2020). As illustrated in Figure 1, the concept of tactical urbanism encompasses a range of characteristics.

**Flexibility and Adaptability**

The concept of tactical urbanism is predicated on the notion of implementing temporary solutions that can be modified or expanded in accordance with their efficacy. This flexibility renders it particularly useful in rapidly changing urban environments, where permanent, large-scale solutions might take years to implement.

**Cost-Effectiveness**

Conventional urban planning frequently necessitates considerable financial investments and protracted planning and construction periods. In contrast, tactical urbanism functions with a reduced budget and can be initiated with limited resources, rendering it an appealing option for municipalities with financial constraints.

**Social Justice and Community Empowerment**

Tactical urbanism involves involving local communities in urban interventions, fostering collective ownership and responsibility. This bottom-up approach ensures solutions address residents' needs and desires, enhancing long-term sustainability. Lydon and Garcia’s (2015) study explored the use of tactical interventions for social causes, including temporary parks in underserved areas, street art displays to promote pedestrian safety, and accessibility through makeshift ramps or crosswalks

**Figure 1.** Benefits of tactical urbanism (Derived from Lydon and Garcia (2015)

Table 1 presents a selection of notable instances of tactical urbanism across the globe, accompanied by detailed descriptions, geographical locations, and an assessment of their impact.

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| **Table 1. Notable Examples of Tactical Urbanism** |
| **Project** | **Year** | **Location** | **Description** | **Impact** | **Reference** |
| **Times Square Pedestrian Plaza** | 2009 | New York City, USA | Pedestrianisation of Times Square using temporary materials; later made permanent. | Improved safety, increased foot traffic, and economic benefits. | [Snøhetta](https://www.snohetta.com/) (n.d.)  |
| **Paris Plages** | 2002-… | Paris, France | Seasonal transformation of Seine banks into urban beaches since 2002. | Enhanced public access to riverfronts and recreation. | Paris (2022) |
| **Superblocks (Superilles)** | 2016-… | Barcelona, Spain | Car-free superblocks promoting pedestrian and cyclist priority since 2016. | Reduced traffic, pollution; increased green spaces. | (Iturralde, 2021)  |
| **Ciclovía** | 1970s-… | Bogotá, Colombia | Weekly car-free events encouraging cycling and pedestrian use since the 1970s. | Boosted public health and global influence on similar events. | (Lydon et al, 2012) |
| **Park(ing) Day** | 2005-.. | Global (orig. San Francisco (USA) | Temporary conversion of parking spaces into public spaces; annual event since 2005. | Raised awareness on public space use; inspired parklets. | (Bela, 2023)  |
| **Better Block Project** | 2010-… | Dallas, USA | Temporary revitalisation of blighted blocks to showcase urban improvement potential. | Catalyzed global community-led urban projects. | Better Block (n.d.) |
| **Play Streets** | 2019-… | London, UK | Temporary street closures for children’s play and community interaction. | Encouraged child-friendly design and community cohesion. | (Sustrans, 2019; Playing Out, 2020)  |

Nevertheless, certain challenges and criticisms have been leveled at tactical urbanism, including governance issues, inclusivity concerns, and the limitations of temporary measures in addressing systemic urban vulnerabilities (Mohankumar, 2020). Participatory approaches to urban planning have been demonstrated to offer significant benefits by encouraging collaboration, integrating different perspectives, and supporting long-term sustainability and resilience. The efficacy of these initiatives in fostering community resilience, enhancing local ownership, and leveraging local knowledge to develop more effective and context-specific solutions has been demonstrated (Özdamar and Önay, 2024). Nevertheless, challenges persist in contemporary urban transformation practices, particularly in Istanbul. For instance, large-scale projects—such as the planned redevelopment of 600,000 earthquake-prone housing units—typically prioritise physical reconstruction over community participation. This dynamic frequently gives rise to discord within the community (Gün, Pak, and Demir, 2020).

**1.2.3. Tactical urbanism in Türkiye**

The concept of tactical urbanism has gained traction on a global scale, including in Türkiye, where cities have utilised temporary, cost-effective interventions to address various urban challenges and respond to immediate urban needs. The implementation of temporary measures, such as street closures, parklets, and pop-up green spaces, offers valuable insights into the potential of cities to enhance public spaces, promote sustainability, and engage citizens in urban transformation. Research addressing issues of tactical urbanism in Türkiye is founded upon original processes, participatory processes, and exemplars (Türkoğlu and Terzi, 2021; Vardı Topal, 2023). The primary focus of these projects is frequently oriented toward the enhancement of public spaces, the facilitation of enhanced mobility, and the cultivation of community engagement. Examples of notable tactical urban planning in Türkiye include the Roman Orchard project in Istanbul and the Transformation of Zümrütevler Square (2019), both of which utilise low-cost, temporary changes to redesign public areas. The Zümrütevler Square project, initiated by Maltepe Municipality with support from the Bernard van Leer Foundation, NACTO, and Superpool, aimed to improve pedestrian safety in the Zümrütevler Neighbourhood for children and families. The initiative included road painting, traffic calming, and seating areas, leading to a 72% increase in square usage (Günç, 2021; Superpool, 2021). Nevertheless, such projects frequently demonstrate deficiencies in scalability or integration into broader planning frameworks, thereby constraining their long-term impact on resilience.

The “Parklet” Projects in Istanbul (2020), initiated by WRI Türkiye Sustainable Cities as part of the WRI Ross Center for Sustainable Cities’ Urban Mobility initiatives in collaboration with the Istanbul Metropolitan Municipality Transportation Department, involve the transformation of on-street parking spaces into small, temporary public parks, known as parklets. This initiative was realised in conjunction with the Fund of the “Partnership for Healthy Cities” (PHC), supported by Bloomberg Philanthropies and partnered with with the World Health Organization and the implementation of the ini. These parklets, which have been implemented in various neighbourhoods, notably in the Beyoğlu district, feature amenities such as benches, greenery, and public art. The objectives of parklets are threefold: to create pedestrian-friendly spaces, to promote social interaction, and to improve public areas. The conversion of automotive space to pedestrian areas is a strategy employed by parklets to reduce traffic congestion and increase foot traffic in local shops. These temporary projects enable the community to evaluate the potential ramifications of long-term urban design modifications (Yaman and Yaraç, 2023; IBB (n.d.)). The “Sokak Bizim Derneği” (Street Belongs to Us, 2010), an NGO in Istanbul aims to enhance pedestrian-friendly infrastructure by temporarily closing streets to cars and reopening them for pedestrians and cyclists (Sokak Bizim Derneği (n.d.)) (Table 2). This initiative, promotes cycling, walking, and social interactions, raising public awareness about sustainable urban mobility based on David Harvey’s “the right to the city” idea. While such practices may contain the potential for the development of more equitable and inclusive urban politics and authentic participatory urbanism, they also carry the risk of failing to produce a substantial and comprehensive urban opposition (Öcal and Erkut, 2019, p. 116).

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| **Table 2. Examples of Tactical Urbanism in Istanbul** |
| **Name** | **Year** | **Location** | **Initiated by** | **Strategy and Description** | **Impact** |
| **Squat house** | 2013-2015 | Kadıköy, Istanbul  | Don Quixote Squat Collective (2013-2015, currently Squatters İstanbul (SQI))  | Social Sustainability and Governance |  |
| **Roma Orchard** | 2013 | Beyoğlu, Istanbul | Roma Orchard Volunteers (2013) | Sustainability of Natural Resources |  |
| **Kuzguncuk Orchard**  | 2014 | Üsküdar, Istanbul  | Kuzguncuk Association |  |  |
| **Historical Yedikule Orchards**  | 2017  | Fatih, Istanbul  | Historical Yedikule Orchards Protection Initiative ( 2013) |  |  |
| **The Transformation of Zümrütevler Square** | 2019 | Maltepe, Istanbul | Bernard van Leer Foundation, NACTO and Superpool | Social Sustainability and Governance (Türkoğlu and Terzi, 2021)Pedestrian safety children and families can use public spaces more safely and comfortably. Roads were covered with colorful paints, traffic was calmed and new seating areas were created. | 72% increase was observed in the number of people spending time in the number of people spending time in the square (Günç, 2021; Superpool, 2021) |
| **Mahalleni Onar (Fix Your Neigbourhood)**  | 2019 | Kadıköy, Istanbul  | Onaranlar Kulübü, Kadıköy Municipality | Local Identity and Urban Aesthetics |  |
| **Boğada Project** | 2017 | Kadıköy, Istanbul  | Herkes için Mimarlık, Onaranlar Club, TAK Kadıköy (Municipality) | Local Identity and Urban Aesthetics | Urban furniture carried out with the participants. (Boğada (n.d.); Trak (n.d.)) |
| **Istanbul’s "Parklet" Projects** | 2020-2022 | Beyoğlu, Istanbul | WRI Türkiye Sustainable Cities, part of Urban Mobility within WRI Ross Center for Sustainable Cities. | Local Identity and Urban Aesthetics, Urban MobilitySeveral parklets (temporary street parks) have been set up in various neighbourhoods, particularly in the Beyoğlu district.  | Parklets enhance public space quality by providing relaxation areas, reducing traffic congestion, and increasing pedestrian foot traffic in commercial areas. |
| **Ayda Bir Gün Sokak Bizim**  | 2010-2019 | Şişli, Kadıköy, Beyoğlu, Beşiktaş, Sarıyer | Sokak Bizim Derneği (Street Belongs to Us, 2010) | Urban Mobility |  |

Some other projects provide successful examples of how public spaces can be transformed with a tactical urbanism approach through rapid, low-cost, and participatory methods. The Tersane Neighbourhood Public Space Renewal Project, İzmir, was implemented in collaboration with the United Nations Development Program (UNDP) and Karşıyaka Municipality. The objective of the project was to enhance two public spaces in the *Tersane* Neighbourhood through the implementation of innovative tactical urbanism interventions. The project, which was carried out with the participation of neighbourhood residents, included the provision of shelter and health solutions for stray cats, as well as the revitalisation of green areas (UNDP Türkiye, 2022). In Kadıköy, tactical urbanism projects are underway that involve the temporary conversion of streets into car-free zones for pedestrians and cyclists. These initiatives facilitate the creation of a more human-centred environment, offering increased opportunities for social interaction and public activities. Furthermore, they advocate for the utilisation of alternative modes of transportation, such as walking and cycling, in order to reduce reliance on private vehicles. The *Boğada* Project, a collaborative endeavour undertaken with *Herkes için Mimarlık* (Architecture for All), *Onaranlar Kulübü* (Fixer’s Club), TAK Kadıköy and numerous additional partners, sought to metamorphose the environs adjacent to the Bull statue in Kadıköy through the implementation of a tactical urbanism approach. In the ten-day study, steps such as field research, production of design ideas, and placement of urban furniture were carried out with the participants (Boğada (n.d.); Trak (n.d.)).

However, tactical urbanism also faces challenges. The temporary nature of the intervention may be a factor in limiting its long-term impact, given that many interventions are not supported by the institutional framework required for permanence. Furthermore, in the absence of a robust planning framework, tactical urbanism projects may be susceptible to fragmentation and disconnection, which can potentially result in outcomes that are fragmented or ineffective. However, the disadvantages and risks associated with tactical urbanism can be categorised as follows: The fundamental principles of urbanism, with their emphasis on simplicity and a myopic focus on the short term, often prove to be at odds with urban development plans and projects that are more ambitious in scope and require a greater investment of resources. The implementation of tactical urbanism initiatives is frequently characterised by a greater degree of complexity in densely populated areas (Ramos, 2022).

**2. The application of transdisciplinary methods in urban resilience planning and action**

Transdisciplinary approaches emerged in the social sciences in the 1970s and were later expanded by physical sciences, including mathematics and quantum physics. Transdisciplinarity is defined as Mode II knowledge production, which refers to knowledge distributed socially and provided to individuals and groups across the social spectrum. This process-oriented framework facilitates communication beyond institutional boundaries, resulting in a global network of nodes (Gibbons et al., 1994). Transdisciplinarity is distinguished by its emphasis on real-world problems, integration of diverse disciplines and perspectives, and engagement with stakeholders outside the academic community. These approaches are characterised by interdisciplinary collaboration, engaging stakeholders from multiple sectors, which renders them particularly well-suited for addressing the multifaceted challenges posed by urban resilience.

The objective of the transdisciplinary approach is to achieve a "unity of knowledge" that transcends disciplinary silos, leading to improvements in the situation under study, the generation of new knowledge, and mutual transformative learning between researchers and participants. This approach has been demonstrated to be particularly effective in addressing sustainability issues such as climate change, poverty, and resource security. The notion of “unity of knowledge” in the context of transdisciplinary research has been articulated by scholars such as Jean Piaget’s early conceptualisation (Klein, 2008) and further developed by scholars like Hirsch Hadorn (2008) asserts, there is a necessity to integrate scientific, moral, and pragmatic technical knowledge in order to address complex societal problems, such as sustainability. Similarly, Julie Thompson Klein (2008) emphasises the importance of cooperation across all sectors in order to solve complex problems and embrace integrative practices for the multidimensionality of reality. These ideas have been institutionalised in frameworks such as those developed by CIRET to understand the complex world (Nicolescu, 2002), with all of these sources emphasising the integration of diverse knowledge forms to address complex societal challenges.

Transdisciplinary research is defined as the integration of knowledge from different scientific disciplines and non-academic stakeholders with the aim of tackling societal issues. The objective is to co-produce knowledge that enhances understanding (system knowledge), provides direction (target knowledge), and guides action (transformation knowledge) for sustainable solutions (Hirsh Hadorn, 2008; OECD, 2020). These approaches emphasise collaboration across multiple disciplines, sectors, and stakeholders to solve complex urban challenges. In contradistinction to conventional disciplinary silos, transdisciplinarity aspires to amalgamate knowledge from a plethora of fields, including but not limited to urban planning, engineering, ecology, sociology, and economics, into a unified, holistic approach. This process not only involves experts but also engages local communities, activists, policymakers, and private-sector actors in co-producing knowledge and solutions (OECD, 2020).

Research on transdisciplinary planning has been shown to effect a paradigm shift in the manner in which knowledge is produced and applied, with a move from isolated disciplinary work to collaborative, problem-oriented, and socially embedded research practices (OECD, 2020). A substantial corpus of research on transdisciplinary planning in urban planning and urban resilience has been published, and this highlights its critical role in addressing complex urban challenges such as public health, climate change, social vulnerability, and sustainable development.

The transdisciplinary approach is a method of problem-solving that is oriented toward the complex, interconnected societal issues of our time. This process entails confronting intricacy, acknowledging a multitude of scientific and societal viewpoints, generating actionable knowledge, and establishing a conduit between scientific and societal comprehension to yield both academic and practical outcomes (Hirsh Hadorn, 2008). This approach involves the collaboration of community organisations, private enterprises, and policymakers, with the objective of co-creating knowledge and solutions that are both socially relevant and actionable (Problem Solving Orientation). This approach has the potential to transcend traditional disciplinary boundaries, thereby producing knowledge that is scientifically rigorous and socially relevant. The process is iterative and non-linear, necessitating the establishment of diverse teams comprising individuals with a range of disciplinary expertise and practical experience. It is imperative to engage with the relevant stakeholders at every stage of the research process, from the formulation of research questions to the integration and evaluation of results. The process frequently involves negotiation and dialogue among participants with different knowledge, assumptions, and interests (OECD, 2020)

Research has been conducted on transdisciplinary planning (Després et al., 2011), the divergence of the Global North and Global South (Pärli, Fischer, Lieberherr, 2022), healthier urban environments (Lawrence, 2022), and the integration of diverse academic disciplines with non-academic stakeholders to collectively address complex societal challenges, particularly in the context of sustainability. As illustrated in Table 3, the aspects of transdisciplinary planning research are demonstrated.

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| **Table 3. Transdisciplinary Planning Research Focus Areas** |
| Integrative knowledge production combining academic and non-academic insights | Evaluation frameworks adapted to transdisciplinary contexts |
| Collaborative stakeholder engagement as co-producers of knowledge | Emphasis on sustainability and societal relevance in research outcomes |
| Iterative, flexible research processes tailored to complex societal problems | Emphasis on sustainability and societal relevance in research outcomes |
| Development of actionable knowledge that informs policy and practice |  |

**2.1. Transdisciplinary approaches in urban resilience**

Urban resilience research acknowledges the significance of participatory and transdisciplinary approaches for enhancing the capacity to respond to social and environmental shocks, including floods, climate change, and other urban stresses. The integration of diverse perspectives and knowledge domains, the fostering of social innovation, and the enhancement of multi-stakeholder cooperation are all essential elements of co-creation and participatory urban planning. This has the effect of strengthening the adaptive capacity and legitimacy of urban governance. The United Nations 2030 Sustainable Development Goals and other international bodies emphasise the need for local governments to foster trust, open communication, and meaningful participation, especially of marginalised groups (United Nations Framework Convention on Climate Change, 2015; United Nations, 2015).

The implementation of transdisciplinary research is encumbered by various factors, including the presence of disciplinary silos, institutional constraints, and the intricacy of integrating disparate knowledge systems. Given the heterogeneity of developing countries, methodologies developed in Western contexts may not be directly transferable, necessitating urgent and context-sensitive designs (OECD, 2020). Transdisciplinary planning is regarded as a transformative approach with the potential to circumvent the limitations of compartmentalised disciplinary work and top-down planning, thereby facilitating sustainable and equitable urban futures (Karaman, 2022). The integration of diverse stakeholders and knowledge systems is imperative in addressing the intricacies and unpredictability inherent in urban environments, including climate change impacts and social inequalities.

Research on transdisciplinary planning in urban planning and urban resilience demonstrates its effectiveness in fostering inclusive, proactive, and integrated solutions to complex urban challenges by engaging multiple stakeholders and knowledge domains in collaborative processes. This approach enhances the capacity of cities to promote health, sustainability, and resilience in the face of growing urban complexities (Lawrence, 2022; Karaman, 2022), as well as integrating transdisciplinarity into spatial planning education (Van der Knaap, 2022) and management of transdisciplianry collaboration between universities and municipalities (Brink et al. 2018).

The concept of urban resilience necessitates the consideration of numerous interconnected factors, including social equity, environmental sustainability, and economic stability. A transdisciplinary approach enables cities to consider all aspects of resilience—environmental, social, cultural, and economic—in one comprehensive framework. The integration of diverse perspectives has been demonstrated to result in the development of more robust and durable solutions. In contradistinction to tactical urbanism, which frequently concentrates on short-term, immediate interventions, transdisciplinary approaches are more likely to engender enduring structural changes. By addressing systemic issues through coordinated, long-term planning and action, these approaches have the potential to create comprehensive resilience strategies that can withstand future shocks (Long-Term Impact). Transdisciplinary methods foster collaboration among diverse stakeholders, ensuring that the voices of marginalised communities and non-experts are included in the decision-making process. Inclusivity is a prerequisite for the creation of equitable solutions that enjoy widespread support. This, in turn, is crucial for the success of urban resilience initiatives (Figure 2).



**Figure 2.** Transdisciplinary approaches promote different aspects of urban resilience

Transdisciplinary approaches also face several challenges. The integration of knowledge from different disciplines can be a daunting task, and the coordination of various stakeholders can prove to be a challenging endeavour. Furthermore, the time and resources necessary for transdisciplinary endeavours can act as impediments for cities with constrained budgets or political will.

**2.2. Transdisciplinary practices in Türkiye**

Turkish cities have been putting human-centered policies and laws, participatory practices, and urban rehabilitation into practice through a variety of initiatives. These practices have enabled Turkish cities to enhance their global competitiveness while ensuring the effective protection of citizens’ rights. According to recent research (2014-2023 Istanbul Regional Plan, 2016), improving urban resilience requires combining interdisciplinary approaches with bottom-up participation. This plan represents a shift to a more customised, bottom-up, and inclusive approach to regional development. The Ministry of Development, academic institutions, local governments, and non-governmental organisations (NGOs) worked together to establish the program. An interdisciplinary strategy was used in the plan, which involved a lot of stakeholder involvement and the integration of different viewpoints to jointly develop knowledge and solutions for advancing sustainability and urban resilience in Istanbul. The "Urban Renewal Project" integrates bottom-up urban concepts with participatory approaches for urban rehabilitation and development. Despite its failure to adequately address the fundamental needs of its users, bottom-up approaches were supported to facilitate urban transformation efforts, including urban rehabilitation and redevelopment against illegal construction, disaster risk, and uncontrolled urban expansion (Yılmaz Bakır, 2020). While interdisciplinary or multidisciplinary frameworks are commonly used in Türkiye, transdisciplinary approaches are not included in these initiatives (Özdamar and Önay, 2024).

According to Arslan and Kaya Erol (2023), the Turkish planning system lacks a legal framework for participation because it is necessary to create flexible and legal frameworks that incorporate participation arrangements in planning and design to build a knowledge and experience base for participatory-oriented design. The development of comprehensive solutions for complicated problems like disaster preparedness and fair resource allocation is made possible by transdisciplinary approaches, which encourage cooperation between technical specialists, local communities, and legislators. However, the development of cooperative platforms that bring together sociologists, architects, and inhabitants in co-design processes is essential to the success of this approach (Özdamar and Önay, 2024). It has been shown that implementing a transdisciplinary approach is a successful tactic for breaking down silos. A key component of the process is the integration of knowledge. In order to build a resilient neighbourhood, for example, engineering, sociology, ecology, and economics must be integrated (Breaking Down Silos: Collaboration Across Disciplines).

While not specific to a particular city, these examples demonstrate efforts to incorporate transdisciplinary and bottom-up approaches in urban planning and development. The overarching objective of these initiatives is to enhance urban resilience, strengthen local communities, and reduce urban inequalities by promoting collaboration, incorporating multiple perspectives, and involving local communities in decision-making processes (Özdamar and Önay 2024).

While the participatory experiments conducted in Türkiye represent a departure from rigid top-down models, the efficacy of these experiments in building resilience is contingent upon the systemic integration of transdisciplinary collaboration and ICT-enabled inclusivity. It is argued that, by anchoring design-thinking processes in empathy and shared expertise, Istanbul's urban transformation could evolve into a model of adaptive, citizen-centred planning that is globally replicable. Transdisciplinary approaches have the potential to significantly enhance urban resilience in Türkiye by addressing complex urban challenges through integrative, participatory, and innovative strategies.

**3. Tactical Urbanism vs. Transdisciplinary Approach**
While both tactical urbanism and transdisciplinary approaches contribute to urban resilience, they differ significantly in terms of their focus, scale, and methodology. Tactical urbanism can be defined as a rapid and cost-effective approach. Transdisciplinary approaches are distinguished by a higher degree of complexity (Table 4).

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| **Table 4. Differences Between Tactical Urbanism and Transdisciplinary Urban Approaches** |
|  | **Tactical urbanism** | **Transdisciplinary Approaches** | **Synergies** |
| **1** | **Temporary vs. Long-Term Solutions** | Short-term interventions (Karaman, 2022)  | Systemic, long-term resilience (Karaman, 2022) |  |
| **2** | **Scalability and Impact** | Hard to scale upTactical urbanism, like parklets, can be scalable but must be mindful of their limitations in addressing systemic issues in urban areas. | Bigger impactTransdisciplinary initiatives are conceived with the objective of achieving a more substantial impact. | Both empower communities. Collaborative projects build skills. Residents become part of the solution |
| **3** | **Community Engagement Models** **Ownership** | Grassroots-driven (Karaman, 2022; Mohankumar, 2020)Value community input. Starts with the communityTactical urbanism, a cost-effective strategy, emphasises community engagement as a fundamental element in its implementation.. | Institutional collaboration (Karaman, 2022; Mohankumar, 2020) Value community input. Need to involve community membersTransdisciplinary projects require additional resources, and the potential benefits of this investment should not be underestimated.. | Community engagement and ownership are multifaceted concepts that have implications across various disciplines and fields of study, emphasizing community involvement. |
| **4** | **Cost-Effectiveness and Resource Allocation** | Cost-effective | Require more resources |  |
| **5** | **Scale and Scope** | Focuses on small, localised Interventions that are swift and cost-effective, often focusing on specific issues in specific neighbourhoods. | Operates on a larger scale, addressing systemic urban challenges and requiring coordination across various sectors and levels of government. |  |
| **6** | **Flexibility vs. Structure** | Thrives on flexibility, experimentation, and immediate action, allowing for rapid adaptation based on real-time feedback, a critical aspect of urban planning and management in dynamic environments.  | Prioritises structured collaboration and long-term planning, often requiring more time and resources to develop comprehensive solutions.  | The dichotomy between flexibility and structure is a fundamental consideration in the field of education.  |
| **7** | **Community vs. Expert-Centric** | Primarily driven by community involvement, often with little reliance on experts or formal planning processes. | Integrates expert knowledge across multiple fields, while still emphasizing the importance of community participation and inclusivity. | A dichotomy exists between community-driven initiatives and those that are expert-centric.  |
| **8** | **Who Can Use?** | Urban planners can use tactical urbanism to test ideas. | Policymakers can support transdisciplinary projects. | Community members can get involved in both |
| **9** | **Adaptability to Climate Challenges** | They both address climate change-induced risks like rising water levels and extreme weather events (Lv and Sarker, 2024) (Karaman, 2022). |

**Synergies between the two approaches**

Despite the apparent distinction between these two approaches, they are not inherently exclusive. The utilisation of these elements in conjunction has the potential to fortify urban areas and enhance their resilience. The efficacy of both approaches is evidenced by their ability to empower communities. For instance, tactical urbanism can function as a proving ground for concepts that are subsequently incorporated into comprehensive, transdisciplinary resilience strategies at the urban scale. In a similar vein, insights derived from transdisciplinary processes can inform and scale tactical urbanism interventions, thereby ensuring their effectiveness and alignment with broader resilience goals. When implementing both bottom-up and transdisciplinary approaches simultaneously, it is critical to strike a balance between competing priorities and interests among stakeholders. Empowering local communities, encouraging collaboration, and engaging diverse perspectives have been demonstrated to be effective strategies for addressing complex issues and producing more inclusive and effective solutions. To achieve this objective, it is necessary to cultivate stakeholder collaboration, engage local knowledge and expertise, and promote sustainable lifestyles through community education initiatives. This comprehensive approach facilitates the formulation of strategies that address complex urban challenges and promote long-term urban resilience and sustainability.

A potential pathway for combining these approaches is through participatory planning, a process that engages communities, experts, and other stakeholders in designing urban interventions. Tactical urbanism can function as a tool for community engagement, providing a platform for experimentation, while transdisciplinary approaches have the potential to guide the broader strategy, ensuring that these smaller interventions fit into a coherent, long-term vision for urban resilience.

The potential for synergy between tactical urbanism and transdisciplinary approaches is a subject that merits further investigation. The following example illustrates the implementation of an integrated approach in a practical context: a city grappling with the challenge of flooding. The implementation of tactical urbanism has been utilised to facilitate the creation of temporary rain gardens. These gardens can absorb water. Concurrently, the city embarks on a transdisciplinary initiative. This initiative involves the collaboration of engineers, ecologists, and residents. The construction of a new drainage system was initiated. The temporary gardens provide insights. The long-term plan has garnered support from the community.

**3.1. Challenges in Türkiye**

Despite the growing emphasis on bottom-up techniques and tactical urbanism in Türkiye, there are discernible deficiencies in the manner in which these approaches have been addressed. The transdisciplinary approach is proposed as a potential means of enhancing the efficacy of these strategies. The most significant challenge to active participation in Türkiye is the centralised administrative structure, which necessitates the development of diverse models to ensure seamless collaboration (İzci and Geylani, 2021). The participatory democracy model posits the existence of active citizens (Tekeli, 2012). The implementation of numerous reforms has resulted in the establishment of a multitude of novel mechanisms in comparison to those that existed previously. The overarching objective of these mechanisms is to ensure the principles of openness, transparency, citizen participation, and decentralisation in governance. In this context, one of the initial steps for policymakers and public authorities should be to establish platforms for implementing an interactive participatory environment through the implementation of regulations containing policy proposals or strategies. However, given the lack of success of this planning, it is crucial to emphasise the importance of citizens' participation in parliamentary committees and their roles in voluntary work and cooperation with city councils and civil society organisations. This approach is predicated on the formation of sustainable and resilient communities, cities, and open systems.

**3.2. Implementation strategies for building synergy between tactical urbanism and transdisciplinary approaches**

Adopting these strategies and focusing on participatory processes would enable Türkiye to create more resilient cities that are better equipped to handle complex urban challenges and promote long-term sustainability. The empowerment of local communities, the encouragement of collaboration, and the engagement of diverse perspectives have been demonstrated to be effective in addressing complex problems and fostering more inclusive and effective solutions. This objective is realised through the cultivation of stakeholder collaboration, the incorporation of local knowledge and expertise, and the advocacy of sustainable lifestyles through community education initiatives. As illustrated in Table 5, the following aspects are pertinent to the establishment of a synergy between tactical urbanism and disciplinary approaches.

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| **Table 5. Building Synergy** |
| **Balancing Priorities** | When implementing both bottom-up and TR approaches, it is critical to strike a balance between competing priorities and interests among stakeholders. This requires;* Empowering local communities
* Encouraging collaboration
* Engaging diverse perspectives
 |
| **Stakeholder Collaboration** | Fostering stakeholder collaboration is essential for addressing complex urban challenges and promoting long-term urban resilience and sustainability. This can be achieved through* Engaging local knowledge and expertise
* Promoting sustainable lifestyles through community education initiatives
* Creating awareness among local governments and citizens
 |
| **Training and Knowledge Transfer** | It is essential that architects, planners, and researchers receive training and experience in knowledge transfer. Design research should be recognised as a legitimate method of knowledge generation to address emerging issues of urban sustainability and resilience (Eker, 2022). |

**Conclusion**

In the context of Türkiye, it is important to leverage the insights derived both form tactical urbanism practices and inter/transdisciplinary approaches to mitigate the repercussions and scope of top-down planning initiative. Planners can play a pivotal role in this transformation by raising awareness among local authorities and citizens, thereby influencing the outcome of these activities. The pathways to urban resilience are diverse and multifaceted, requiring innovative and collaborative approaches. Tactical urbanism can be defined as a dynamic, grassroots-driven strategy that enables rapid, localised responses to urban challenges. Transdisciplinary approaches offer a more structured, long-term framework for dealing with the complex, interconnected difficulties that cities face. Understanding the strengths and limitations of these two tactics allows cities to combine their skills to create urban environments that are not only robust to current challenges, but also flexible to future uncertainty.

Democratic participation demands more than the active involvement of local administrators or the general public; it necessitates the implementation of an integrated and seamless system to achieve the city's objectives. The notion of the "right to the city" is predicated on the notion of egalitarianism, rather than on a hierarchical relationship in which certain individuals or groups are regarded as having superior rights over others. Instead, this is achieved through a dynamic and temporary process involving the distribution of power. More significantly, however, both transdisciplinary approaches and tactical urbanism must be directed toward regenerative cities, which emphasize combining regeneration for long-term planetary health with resilience for short-term stability. Systems that actively safeguard their ecosystems, encourage circularity, and benefit all living things—not just humans—are required. This calls for equitable and prosperous planning and design that is focused on the community.

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