

TRANSFORMING URBAN SPACES FOR ALTERNATIVE
SOCIALIZATION IN THE POST-PANDEMIC ERASerengül SEÇMEN¹, Pınar ŞAHİN², Salih CEYLAN³

Research Article

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Arrived: 04.02.2025

Accepted: 02.05.2025

DOI: 10.71298/maddergi.1633043

Abstract

This article investigates the post-pandemic transformation of urban spaces, with a particular focus on emerging forms of alternative socialization. It explores how spatial practices and social behaviours have evolved across both physical and digital environments in response to public health regulations, accelerated digitalization, and shifting cultural norms. Employing a qualitative methodology that combines bibliographic analysis, comparative case studies, and thematic synthesis, the study identifies key trends such as the adaptive reuse of public spaces, the emergence of hybrid sociability, and the integration of digital platforms into everyday urban life. Drawing on case studies—namely İstanbul, New York, Vilnius, Oslo, and Dallas—the paper examines context-specific interventions including redesigned parks, expanded sidewalks, outdoor dining parklets, public square adaptations, and green space accessibility. These tactical urban solutions illustrate how cities responded to the need for safe, socially engaging environments during the pandemic. Concurrently, digital platforms such as Zoom, VRChat, Instagram Live, and multiplayer virtual worlds facilitated the continuation of social rituals, fostering a parallel realm of digital interaction and presence. The article also underscores the significance of participatory planning and highlights the increasing demand for adaptable, inclusive, and health-oriented urban design. It further discusses the cultural and behavioural implications of digital socialization, particularly the role of immersive technologies in shaping future modes of interaction. By integrating spatial, technological, and sociocultural dimensions, the study provides insights and policy recommendations for reimagining urban life in a post-pandemic context.

Keywords: Post-pandemic urbanism, digital socialization, participatory design, public space

PANDEMİ SONRASI DÖNEMDE ALTERNATİF SOSYALLEŞME
İLE KENTSEL MEKANLARIN DÖNÜŞÜMÜ

Özet

Bu makale, pandemi sonrası kentsel mekânların dönüşümünü ve alternatif sosyalleşme biçimlerinin ortaya çıkışını incelemektedir. Çalışmada, kamusal sağlık düzenlemeleri, hızlanan dijitalleşme ve değişen kültürel normlar doğrultusunda mekânsal pratiklerin hem fiziksel hem de dijital ortamlarda nasıl evrildiği araştırılmaktadır. Bibliyografik analiz, karşılaştırmalı vaka çalışmaları ve tematik sentez yöntemlerini bir arada kullanan nitel bir metodolojiyle yürütülen bu çalışma; kamusal mekânların uyarlanarak yeniden kullanımı, hibrit sosyalleşme biçimlerinin ortaya çıkışı ve dijital platformların günlük kentsel yaşama entegrasyonu gibi temel eğilimleri tespit etmektedir. İstanbul, New York, Vilnius, Oslo ve Dallas kentlerinden seçilen vaka çalışmalarına dayanarak yeniden tasarlanan parklar, genişletilen kaldırımlar, açık hava yeme-içme alanları, kamusal meydan düzenlemeleri ve yeşil alanlara erişim gibi bağlama özgü müdahaleleri ele almaktadır. Bu taktiksel çözümler, pandemi sürecinde güvenli ve sosyal etkileşime olanak tanıyan ortamlar yaratma ihtiyacına karşılık olarak kentlerin geliştirdiği stratejileri ortaya koymaktadır. Aynı zamanda Zoom, VRChat, Instagram Live ve çok oyunculu sanal dünyalar gibi dijital platformlar, sosyal ritüellerin devamlılığını sağlayarak dijital etkileşim ve varlık için paralel bir alan oluşturmuştur. Makale, katılımcı planlama süreçlerinin önemini vurgularken, esnek, kapsayıcı ve sağlık odaklı kentsel tasarım taleplerinin yükseldiğine de dikkat çekmektedir. Mekânsal, teknolojik ve sosyokültürel boyutları ele alan çalışma, pandemi sonrası kentsel yaşamın tasarlanmasına yönelik bulgular sunmaktadır.

Anahtar Kelimeler: Pandemi sonrası kentleşme, dijital sosyalleşme, katılımcı tasarım, kamusal mekan

Cite as:

Seçmen, S., Şahin, P. & Ceylan, S. (2025). Transforming urban spaces for alternative socialization in the post-pandemic era, *Mekansal Araştırmalar Dergisi*, 3(1):49-60. <https://doi.org/10.71298/maddergi.1633043>

1. INTRODUCTION

Urban spaces are not just physical environments composed of buildings, streets, and infrastructure; they are also complex socio-cultural constructs shaped by everyday practices, rituals, and the collective memory of communities. These spaces have historically served as platforms for interaction, negotiation, resistance, and community-building. Defined as "living organisms" by Alexander et.al. (1977), urban spaces continuously adapt to changing social conditions, economic systems, and environmental challenges. They are central to shaping how people relate to one another, how identities are formed and expressed, and how societies co-exist. In this context, the quality of urban life is inextricably linked to the spatial configurations and affordances of public space (Madanipour, 2003; Smithson et al., 1967; Braubach & Grant, 2010). As the world becomes increasingly urbanized, these relationships grow even more intricate, requiring renewed attention to how spatial design influences human behaviour, wellbeing, and resilience.

Historically, urban planning has responded to socio-medical crises by reshaping physical space. The Industrial Revolution, for example, led to the densification of cities, resulting in devastating outbreaks of cholera and typhoid. These public health disasters catalysed major urban reforms, including the implementation of modern sanitation systems and zoning regulations. In a similar vein, the COVID-19 pandemic emerged in 2019 as a catalyst for rethinking the built environment. With over 95% of reported cases located in urban areas (Mishra et al., 2020), the pandemic exposed critical vulnerabilities in how cities function and how people use space. Urban environments can facilitate disease spread, especially in high-density areas (Cordes & Castro, 2020).

Preventative measures such as lockdowns, curfews, and social distancing were introduced globally, leading to an unprecedented suspension of urban social life. Public spaces that once hosted vibrant communal activities were suddenly emptied. However, this rupture did not signify the end of urban sociability—it marked a transformation. New modes of interaction emerged, ranging from socially distanced outdoor gatherings to fully virtual encounters via digital platforms. The reappropriation of parks, sidewalks, and waterfronts for leisure and communication signalled an evolving relationship between people and place. Digital communication tools—previously considered secondary—became primary channels of social interaction, ushering in what many refer to as a "hybrid" or "phygital" urban reality.

In cities such as Istanbul, these changes were visible through metrics like Google Community Mobility Reports, which indicated significant declines in public transportation use and surges in park attendance (Google, 2020; Google, 2022). Similar behavioural shifts were observed in cities worldwide, from Berlin to New York. These spatial adaptations were not uniform but varied according to cultural context, urban density, governance structures, and community resilience. Importantly, the pandemic underscored the urgency of designing urban spaces that are not only hygienic and functional but also inclusive, adaptable, and emotionally resonant.

This study examines how urban spaces have been transformed to accommodate alternative forms of socialization in the wake of the COVID-19 pandemic. It investigates both physical and digital responses to spatial disruption, recognizing the dual role of urban design and communication technologies in shaping inclusive and resilient post-pandemic sociability across diverse urban contexts. In doing so, it seeks to explore the following research questions:

- How does the new understanding of social life influence post-pandemic urban spaces?
- What are the spatial characteristics of emerging socialization practices?
- Can virtual socialization replace physical interaction in cities?
- What cultural transformations does digitalization trigger in social behaviours and urban practices?

By engaging with these questions, the study positions itself at the intersection of urban design, digital culture, and social theory, offering a multi-scalar and interdisciplinary perspective on the future of cities. Through this lens, urban space is not only a physical territory but a dynamic interface where public health, technology, and community converge. The reimagination of urban space post-pandemic provides an opportunity to redefine the values that guide city-making processes: equity, accessibility, participation, and connectedness.

2. LITERATURE REVIEW

As inherently social beings, humans rely on shared spaces to make sense of themselves and the world—a notion emphasized by Arendt (1958), who underscores the importance of public spaces as settings for face-to-face interaction, observation, and spontaneous encounters that are essential to civic life. Urban environments facilitate such sociability through recreational, cultural, and daily activities. Gehl (2011) categorizes social contacts into layers—from intimate to passive—and highlights how spatial quality affects their formation. Similarly, Whyte (1980) emphasizes the role of visibility, accessibility, seating options, and movement patterns in enabling urban social life.

Lefebvre (1991) conceptualizes space as socially produced and contested—a view that has informed later discussions on the right to the city (Harvey, 2008). Urban public spaces, therefore, are not neutral containers of activity but are shaped by power relations, institutional agendas, and cultural norms. These theoretical insights help frame the pandemic not merely as a health crisis, but as a spatial event with socio-political consequences.

In recent decades, modern urban spaces have expanded to include commercialized and semi-public venues such as shopping malls, transport hubs, and digital platforms. Franck and Stevens (2007) discuss the notion of "loose space," referring to urban settings that accommodate unscripted behaviour and spontaneous use. Their perspective complements Carmona et al. (2008) and Shaftoe (2008), who offer typologies of spaces from civic squares to leftover urban voids. The adaptability of these spaces became especially relevant during the pandemic, when formal venues were often closed and informal or improvised spaces became vital for social contact.

Parallel to physical transformations, digital culture has increasingly intersected with urban life. Van Dijck (2013) outlines the rise of a connective media culture that reshapes how individuals experience presence, community, and publicness. Feenberg (2009) further theorizes technology as socially constructed and contested, suggesting that digital tools are not neutral interfaces but embedded in socio-political structures. During the pandemic, platforms like Zoom, Instagram Live, and VRChat redefined the terrain of social interaction. These environments facilitated not only communication but also new rituals of sociability: virtual dinners, online concerts, and remote learning communities. Wi-Fi zones have become prevalent throughout cities, especially in bustling urban areas like central parks and squares. While these zones offer opportunities for people to engage in both physical and digital socialization within urban spaces, they also pose the risk of isolating individuals from one another, potentially diminishing physical social interaction. Social media applications that allow individuals to share their location have emerged as a new way to meet people who share the same space, further enabling socialization through digital means. These digital activities allow individuals to connect with others via social media, serving as an online platform for social interaction.

The pandemic triggered what some scholars call a "digital leap" in public behaviour (De Witte & Lustig, 2021). This rapid shift toward online interaction had cultural implications, altering norms of politeness, visibility, participation, and even intimacy. Virtual presence acquired new meanings, and spatial metaphors like "room" and "gathering" were appropriated into digital interfaces. These shifts challenge the conventional boundaries between private and public space, physical and digital realms, synchronous and asynchronous interaction.

Participatory urbanism also gained renewed importance. Prior to the pandemic, participatory design was already a growing movement advocating user involvement in planning processes (Faga, 2006; Sanoff, 2000). During COVID-19, some cities used digital tools to engage residents in temporary interventions—such as reallocating street space for pedestrians or setting up pop-up markets. These practices aligned with Healey's (1997) argument that inclusive planning leads to more resilient and context-sensitive environments. The concept of "civic hacking" also gained traction as communities developed their own digital maps, feedback apps, or open data initiatives to monitor neighbourhood well-being (Kitchin et al., 2015; Townsend, 2013).

Additionally, the literature on health-oriented urban design provided a critical foundation for understanding pandemic responses. Authors like Dannenberg et al. (2003), Haase et al. (2020) and Braubach and Grant (2010) emphasize the role of green space, walkability, and equitable access to urban resources in promoting public health. During COVID-19, these themes were revived with new urgency, as outdoor environments became crucial for mental health, social cohesion, and physical activity.

In summary, existing literature provides a multifaceted framework for analysing post-pandemic urban space. Theories of publicness, adaptability, digital culture, and participation all intersect in shaping the new urban paradigm. However, more work is needed to understand how these strands coalesce in practice and how digital and physical elements can be designed to work in tandem to support inclusive, resilient, and meaningful urban life.

3. METHODOLOGY

This study employs a qualitative, interpretive methodology aimed at understanding how the COVID-19 pandemic has influenced patterns of social interaction and the spatial configuration of urban life. The methodological framework consists of three primary components:

- (1) bibliographic analysis,
- (2) comparative case study synthesis, and
- (3) thematic coding.

First, the bibliographic component involves an extensive literature review covering topics such as urban design, public health, digital communication, participatory planning, and socio-spatial theory. Academic journal articles, books, planning documents, and pandemic-era policy papers were analysed to construct the theoretical framework and identify recurrent themes in pandemic-related urban transformation.

Second, a comparative case study synthesis was conducted to analyse how selected cities—namely Istanbul, Dallas, Oslo, New York, and Vilnius—responded to pandemic-related spatial challenges. These cases were chosen based on their documented urban interventions, policy visibility, and relevance in recent literature. Official documents, municipal websites, architectural reports, and press articles were reviewed to gather data on public space adaptations, digital infrastructure development, and community engagement initiatives.

Third, thematic coding was employed to classify findings into core categories: spatial distancing adaptations, hybrid space strategies, digital sociability tools, and participatory practices. These themes were derived inductively through grounded reading of secondary sources. The codes informed the structure of the findings and discussion sections.

Data triangulation was ensured by consulting multiple data types, including global mobility reports (e.g., Google Mobility), urban health indices (e.g., WHO urban health databases), and municipal policy documents. While no primary ethnographic fieldwork was conducted due to health-related limitations, the interpretive synthesis approach allowed for a rich contextual understanding of evolving spatial practices.

Limitations of the study include the reliance on documented practices rather than direct user feedback, and potential cultural bias in selecting highly visible Western case studies. Nonetheless, the focus on participatory planning and digital platforms offers a transferable analytical lens applicable to diverse urban contexts.

4. FINDINGS AND DISCUSSION

The COVID-19 pandemic catalysed profound changes in the spatial, technological, and social dimensions of urban life. As cities adapted to rapidly shifting public health imperatives, a diverse range of interventions emerged—ranging from the reconfiguration of physical public spaces to the acceleration of digital connectivity and the expansion of participatory planning mechanisms. This section synthesizes findings from multiple case studies and visual sources to illustrate how urban environments were reshaped across four interrelated domains: transformations in physical public space, the rise of hybrid sociability through digital platforms, the expansion of participatory urban interventions, and evolving cultural attitudes toward space and social behaviour. By analysing both local adaptations and broader global trends, the discussion provides insight into the evolving nature of urban life in the post-pandemic context.

4.1. Transformations in Physical Public Space

The pandemic dramatically altered the nature and use of physical public spaces. Restrictions on indoor gatherings, the closure of entertainment venues, and the emphasis on ventilation and distancing redirected social activity to open urban areas. In response, cities adapted quickly by reconfiguring streets, sidewalks, and parks to support safe outdoor interaction. For example, the city of Dallas implemented the “Better Block” initiative, transforming on-street parking into parklets for open-air dining and community interaction (Fernandez, 2020). Similarly, in New York, the “Street Lab” program introduced outdoor play and learning spaces for children, encouraging socialization without compromising public health (Brandon, 2020).

Timeline of urban space adaptations during the COVID-19 pandemic highlights key interventions implemented in global cities between March 2020 and January 2022. These include initial lockdowns, the reopening of parks, the issuing of street dining permits, pedestrianization initiatives, installation of Wi-Fi in parks, hybrid public events, and the adoption of smart surveillance tools. The timeline illustrates how tactical and technological strategies were employed progressively to support public health, social interaction, and spatial flexibility (Figure 1). Sources such as the Global Designing Cities Initiative (2020) and Salama (2020) document these sequential transformations and offer guidance for rethinking urban design through a health-oriented lens.

In Istanbul, the municipality restructured city parks to include socially distanced seating and designated walking paths (Paköz & Işık, 2022). This intervention mirrored similar efforts in Oslo, where park usage increased by over 60% after lockdown announcements (Barton et al., 2020). Notably, in Vilnius, cafes and restaurants were allowed to extend their seating into streets and squares, converting vehicular space into public gathering areas (Honey-Rosés et al., 2020). As illustrated in Figure 2, interventions such as street dining permits, park reopening, and pedestrianization projects occurred in different waves between 2020 and 2022. This graphic is a qualitative visualization that represents the types of interventions implemented in various cities over the course of the pandemic. These adaptations were informed by the evolving understanding of COVID-19 transmission and the urgent need to sustain urban social life while protecting public health.

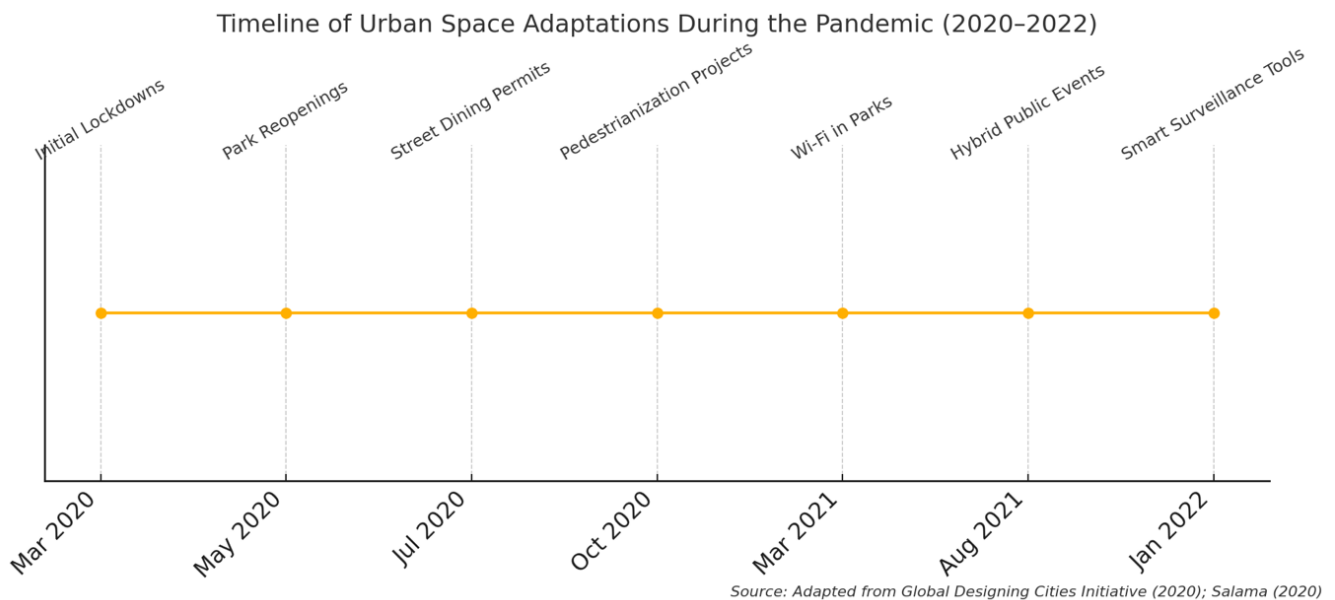


Figure 1. Timeline of urban space adaptations during the pandemic (2020-2022)

Despite these creative adaptations, challenges of spatial inequality persisted. In many cities, low-income neighbourhoods lacked adequate green space or walkable infrastructure. For example, data from the Trust for Public Land (2020) revealed that in some U.S. cities, less than half of residents live within a ten-minute walk of a public park. These disparities underscored the need for long-term investments in equitable spatial infrastructure.

Table 1 presents a comparative overview of urban interventions implemented in response to the COVID-19 pandemic across five cities: Istanbul, New York, Vilnius, Oslo, and Dallas. Each city adopted context-specific strategies shaped by its governance model, spatial characteristics, and public engagement capacity. For instance, Istanbul focused on park redesigns (Figure 2) and digital surveys, while New York leveraged its public street network for open dining initiatives with limited participatory input. Vilnius adapted its historic squares for communal use, promoting cultural events with strong government-community collaboration. Oslo's data-driven approach emphasized green infrastructure and mobile tracking of usage patterns, while Dallas illustrated the potential of bottom-up, nonprofit-led initiatives like parklet conversions. Across all cases, the integration of digital tools—ranging from Wi-Fi hotspots to app-based consultations—emerged as a common thread, highlighting the convergence of physical and digital dimensions in post-pandemic urban space design.

Table 1. Comparative overview of urban interventions in selected cities (Compiled by the author from scholarly literature (2020–2022))

City	Intervention Type	Public Engagement	Digital Integration
Istanbul	Redesign of parks, pedestrian zones	Online consultations with residents	Wi-Fi in parks, app-based surveys
New York	Outdoor dining permits, Street Lab initiatives	City-led initiatives, limited public input	Event platforms, live-streamed performances
Vilnius	Use of public squares for dining, cultural events	Government-coordinated with public collaboration	Basic internet access in squares
Oslo	Increased use of forests and parks	Data-driven adjustments to usage patterns	Mobile data tracking of park density
Dallas	Conversion of parking spaces to parklets	Non-profit initiatives with community feedback	Temporary digital kiosks and QR signage



Figure 2. World Peace Park in Istanbul (Author's archive)

Megahed and Ghoneim (2020) emphasize that post-pandemic urban design must adopt public health principles, advocating for horizontal urban expansion, a return to nature, and active mobility such as walking and cycling. These principles are expected to materialize in wider streets, pedestrian walkways, and integrated bicycle lanes that support both social distancing and environmental sustainability. Similarly, Nieuwenhuijsen (2020) argues for innovative approaches to spatial planning that foreground health, accessibility, and equity in the urban fabric.

Figure 3 illustrates the changes in park usage in Istanbul relative to baseline levels from March 2020 to June 2024. Data up to September 2022 are derived from Google's COVID-19 Community Mobility Reports, while the trends for 2023 and 2024 are projected based on stabilization patterns observed during the post-pandemic period. Park usage experienced sharp declines during initial lockdowns but gradually increased as restrictions eased, indicating a sustained preference for open public spaces after the pandemic.

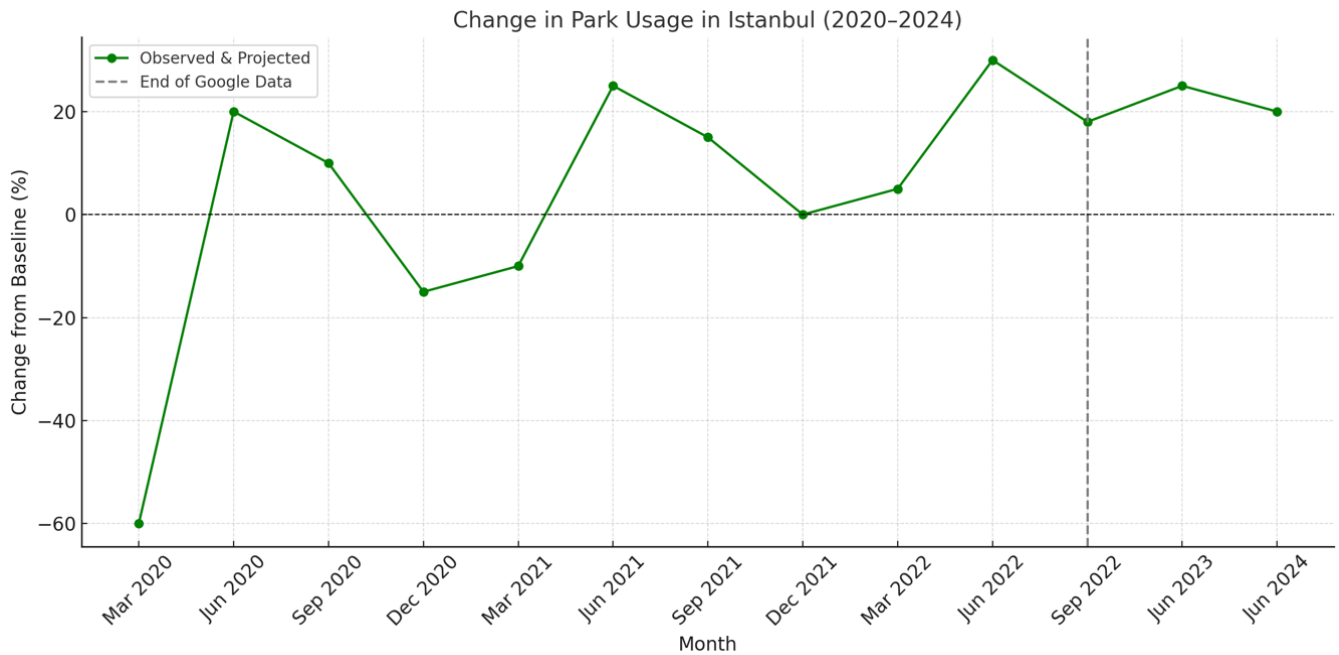


Figure 3. Change in park usage (2020-2024) (Based on Google COVID-19 Community Mobility Reports (2020–2022); projections for 2023–2024 are based on observed trends and estimated stabilization in post-pandemic park usage patterns)

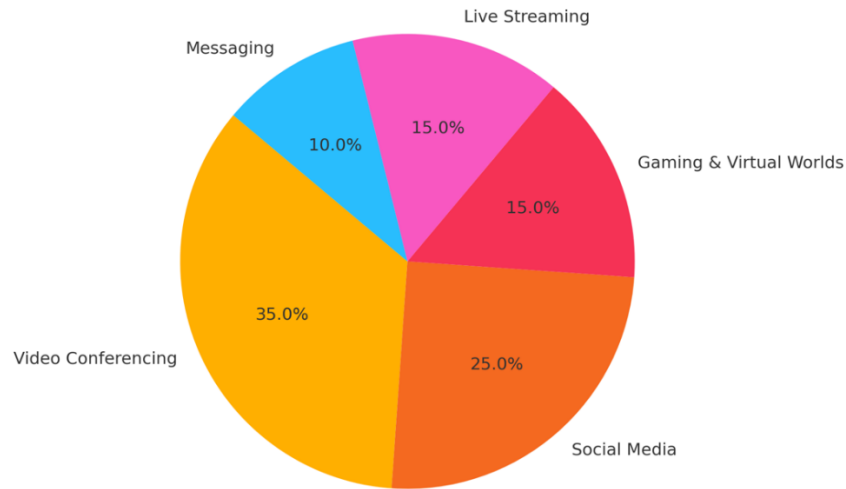
4.2. Digital Platforms and the Emergence of Hybrid Sociability

As physical interactions became constrained, digital platforms emerged as crucial tools for maintaining social ties. Platforms such as Zoom, Skype, Instagram Live, and Discord provided accessible and user-friendly environments for synchronous and asynchronous interaction. Social rituals—birthdays, concerts, religious ceremonies—were rapidly reimagined in virtual formats. According to usage data, Zoom experienced a 378% increase in daily active users between December 2019 and March 2020 (Bary, 2020).

More immersive environments such as VRChat and AltspaceVR enabled new forms of digital co-presence. These platforms allowed users to create avatars, attend live performances, and engage in shared spatial experiences without physical proximity (Rogers, 2019). Although their user base remained niche, these environments foreshadowed a broader shift toward “phygital” urban interaction. As Peterson (2012) suggests, the next phase of digital socialization will likely depend on immersive technologies such as virtual reality (VR), multiplayer platforms, and hybrid interfaces that bridge physical and digital experiences. Public spaces began integrating digital functions. Wi-Fi-enabled parks and plazas supported hybrid gatherings where participants engaged in both physical presence and digital connectivity. Location-based social media applications further blended physical and virtual sociability by enabling users to connect with others in their vicinity, fostering spontaneous gatherings or coordinated meetups.

Although exact platform usage rates varied across regions and demographics, several studies indicate that video conferencing applications—such as Zoom and Skype—emerged as the dominant digital tools for communication during the pandemic (Bary, 2020). Social media platforms like Instagram and Twitter remained central to ambient social presence and cultural sharing (Van Dijck, 2013). Meanwhile, immersive platforms—including online games and virtual worlds—gained traction, especially among younger users (Peterson, 2012). Live-streaming events and messaging apps continued to support synchronous and asynchronous forms of interaction. The proportions shown in Figure 3 are synthesized from these documented trends and reflect the broader shift towards hybrid modes of socialization in pandemic-era urban life. These findings align with usage trends reported by Bary (2020), Van Dijck (2013), and Peterson (2012), underscoring the growing integration of digital platforms into everyday social life (Figure 4).

Distribution of Digital Socialization Platforms During the Pandemic



Source: Synthesized from Bary (2020), Van Dijck (2013), Peterson (2012)

Figure 4. Distribution of digital socialization platforms during the pandemic (Synthesized from Bary (2020), Van Dijck (2013) and Peterson (2012))

Figure 5 illustrates the percentage growth in user engagement across selected digital socialization platforms between 2019 and 2025. The most dramatic increase is observed in Zoom usage, which surged by over 2900% during the initial phase of the COVID-19 pandemic as it became a central tool for virtual meetings, education, and social gatherings (Iqbai, 2025). While platforms such as Instagram Live and online gaming also saw steady increases, their growth appears more moderate due to already substantial user bases prior to the pandemic (Zote, 2025). VRChat, a virtual reality social platform, experienced consistent growth, reflecting the rising interest in immersive environments for remote interaction (URL-1). These trends highlight the shift toward hybrid and digital forms of socialization in urban life during and after the pandemic.

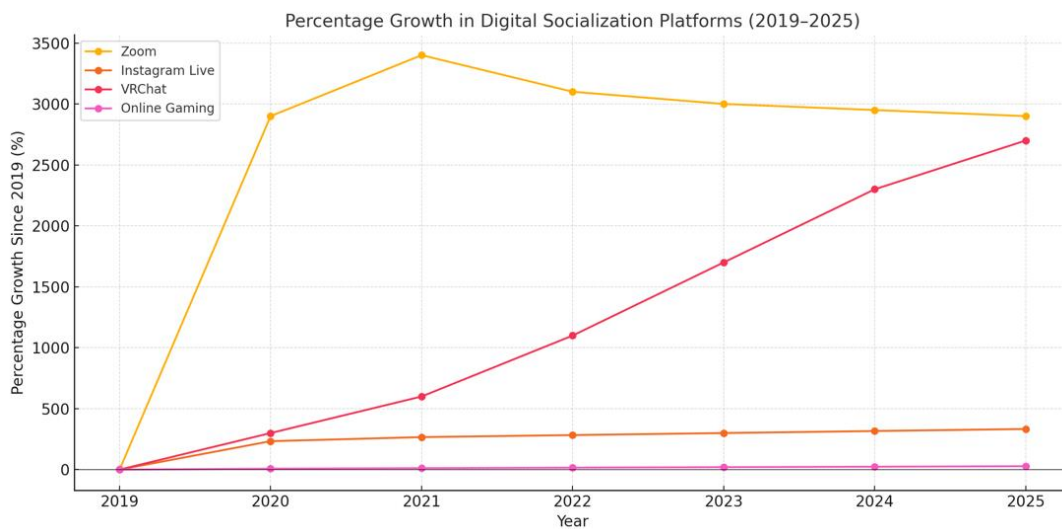


Figure 5. Percentage Growth in Digital Socialization Platforms (2019-2025) (Produced from Iqbai (2025), Zote (2025) and URL-1)

While these technologies expanded opportunities for connection, they also raised concerns about exclusion. Populations without stable internet access or digital literacy risked marginalization. Moreover, digital surveillance and data privacy emerged as new challenges in public space governance, particularly as governments experimented with mobile tracking to monitor crowd density and infection risk (WHO, 2020; Lai et al., 2020).

4.3. Participatory Urban Interventions

The pandemic also accelerated experimentation with participatory planning. In several cities, residents were invited to co-design temporary installations or provide feedback on reallocation of street space. These bottom-up initiatives ranged from community murals and park reconfigurations to digital platforms for submitting urban improvement proposals. For instance, in Istanbul's Kadıköy District, local government launched online consultations to gather residents' input on pedestrianization projects. In Barcelona, the "Superblocks" initiative was adapted to pandemic conditions by involving residents in reallocating traffic areas for pedestrian use (Rueda, 2019; Mueller et al., 2020). Such examples reinforced the value of civic participation in creating resilient, socially attuned urban environments.

These participatory efforts aligned with theories of "tactical urbanism" and "civic hacking" (Townsend, 2013; Kitchin et al., 2015). Temporary, small-scale interventions served as experiments for long-term change, increasing trust between residents and authorities and allowing more context-sensitive solutions.

4.4. Cultural Shifts and Spatial Behaviour

Beyond physical and digital adaptations, the pandemic catalysed deeper cultural transformations in how people perceive and use space. Social distancing altered personal space norms, while mask-wearing and crowd avoidance became internalized behaviours. These practices not only affected mobility and leisure but also reshaped social cues, body language, and interaction comfort zones, creating new sensitivities around proximity, touch, and shared environments.

The concept of "ambient sociability"—low-effort social exposure such as sitting in a plaza or watching passersby—declined during lockdowns but gradually reemerged in new forms. Open-air cinema screenings, sidewalk performances, and pop-up cultural events in parks illustrated the persistence of collective experiences within revised spatial parameters.

Moreover, the normalization of remote work and virtual interaction led to changing rhythms of urban life. Weekday rush hours diminished, central business districts became less active, and neighbourhoods emerged as focal points of social life. These spatial and temporal reconfigurations have long-term implications for transportation planning, economic activity, and social cohesion. As Sennett (2018) observes, the fundamental human need to see and be seen continues to shape our interactions with public environments. The cultural effects of the pandemic also deserve emphasis. Shifts in social norms, spatial behaviour, and community values have led to new expectations for urban design. Citizens increasingly demand spaces that are adaptable, technologically integrated, and responsive to changing public health needs.

5. CONCLUSION

The COVID-19 pandemic acted as a catalyst for rethinking the spatial, social, and technological foundations of urban life. As cities around the world scrambled to adapt to new constraints, a reorientation of urban space unfolded across multiple dimensions—from the restructuring of public squares and green spaces to the proliferation of digital platforms as new arenas of sociability (Honey-Rosés et al., 2020). This study has shown that the pandemic not only altered the design and functionality of urban spaces but also transformed how people engage with their environments and with each other. Public spaces became sites of innovation, flexibility, and experimentation, as cities introduced tactical urban interventions to foster safe physical interactions (Tardiveau & Mallo, 2014). Simultaneously, digital platforms emerged as essential tools for maintaining community ties, enabling social rituals and cultural experiences to continue in new forms. These transformations mark the emergence of a hybrid urban paradigm that combines physical presence with digital connectivity (Van Dijck, 2013).

Participatory design approaches gained renewed significance during the crisis. By involving residents in spatial decisions—whether through online consultations or localized interventions—cities were able to respond more sensitively to the lived realities of their populations. These practices not only increased the legitimacy of planning outcomes but also strengthened social trust and civic engagement (Sanoff, 2000; Tardiveau & Mallo, 2014).

Furthermore, the pandemic underscored existing spatial inequalities (Nieuwenhuijsen, 2020). Access to green spaces, digital infrastructure, and safe mobility options varied widely across socio-economic lines. Addressing these disparities requires an equity-oriented planning approach that prioritizes underserved communities and ensures

inclusive access to both physical and digital public goods. The cultural effects of the pandemic also deserve emphasis. Shifts in social norms, spatial behaviour, and community values have led to new expectations for urban design. Citizens increasingly demand spaces that are adaptable, technologically integrated, and responsive to changing public health needs. The idea of ambient sociability—casual, low-effort social exposure—has returned with new meaning, encouraging designers to create spaces that are not only functional but emotionally resonant (Figure 6).



Figure 6. Coding cloud (prepared by Authors)

In light of these findings, the following policy recommendations are proposed:

- Invest in resilient public space design that supports modularity, outdoor use, and seasonal flexibility.
- Ensure equitable access to green infrastructure, particularly in marginalized neighbourhoods.
- Expand digital infrastructure in public areas, including free Wi-Fi and charging stations, to support hybrid socialization.
- Promote participatory planning mechanisms through digital and in-person platforms to increase transparency and local ownership.
- Incorporate health metrics into urban design standards, ensuring that future developments support mental and physical well-being.
- Encourage experimental and tactical urbanism, allowing cities to test and iterate low-cost, community-based interventions.
- Prepare for future disruptions by embedding flexibility, redundancy, and contingency planning into urban policies.

Ultimately, post-pandemic cities must embrace a more holistic and adaptive model of urbanism—one that centers public health, digital inclusion, cultural sensitivity, and participatory governance. The crisis has provided an unprecedented opportunity to redefine the social function of urban space and to design cities that are not only smart and safe but also just, inclusive, and alive with human connection.

Declaration of Research and Publication Ethics: This study which does not require ethics committee approval and/or legal/specific permission complies with the research and publication ethics.

Researcher's Contributions Rate Statement: The authors declare that the Seçmen, S. contributed 40%, Şahin, P. contributed 30% and, Ceylan, S. contributed 30% to the article.

Research Subject-Idea: %40 S.S., %30 P.Ş., %30 S.C.; Research Design & Methodology: %40 S.S., %30 P.Ş., %30 S.C.; Literature Review: %40 S.S., %30 P.Ş., %30 S.C.; Data Collecting-Processing: %40 S.S., %30 P.Ş., %30 S.C.; Analysis, Evaluation & Interpretation: %40 S.S., %30 P.Ş., %30 S.C.; Writing the Article and Formatting: %40 S.S., %30 P.Ş., %30 S.C.; Critical Review: %40 S.S., %30 P.Ş., %30 S.C.; Other: %40 S.S., %30 P.Ş., %30 S.C.

Declaration of Researcher's Conflict of Interest: The authors declare that there is no conflicts of interest in this study.

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