JOURNAL OF DESIGN FOR RESILIENCE IN ARCHITECTURE & PLANNING

Research Article
Online: www.drarch.org
Volume 4, Special Issue (65-77), 2023
DOI: 10.47818/DRArch.2023.v4si110

Reinterpreting "Sustainability" and "Resilience" in the post-pandemic urban planning paradigm

Zeynep Deniz Yaman Galantini*

Abstract

In the past three years, there has been no crisis more "unexpected" than the COVID-19 epidemic, which was deemed as pandemic by WHO on March 11, 2020. Indeed, urban planning must play a significant role in resolving the pandemic dilemma. So, given that pandemics are natural disasters and environmental factors are their primary cause, how is it possible we are still experiencing this outbreak even though "resilience" and "sustainability" principles are ingrained in urban planning paradigms? Accordingly, it is essential to grasp how to incorporate "sustainability" and "resilience" ideas into urban planning processes and to develop the institutional capability to manage and monitor these procedures. Therefore, the purpose of the study is to clarify how sustainability and resilience principles might help to define the essential elements of the "post-pandemic" urban planning paradigm through conceptual analysis and a thorough assessment as the methodology. The first section discusses the necessity of the two most relevant concepts of urban planning paradigms; "sustainability" and "resilience" to tackle with pandemics, followed by the discussion of the "pandemic city" and "post-pandemic city" concepts. Finally, the last chapter explores how the attributes of resilience and sustainability can contribute to "post-pandemic urban planning" paradigm.

Keywords: Resilience, sustainability, pandemic city, post-pandemic city, post-pandemic urban planning

1. Introduction

One of the most "unexpected" crises of the 21st century, the COVID-19 outbreak on March 11, 2020, was recognized as a pandemic by the World Health Organization. As Ali et al. (2022) stated, urban and planning thinkers and practitioners were reminded of the baggage that planning carried when it came to the history of infectious disease in cities when the global pandemic was declared, and the shifting rhythms and constrained spatial patterns of urban life became empirical and chiefly experimental almost overnight. Since the emergence of what Gandy (2006), as cited by Ali et al. (2022), called the bacteriological city at the beginning of the 20th century, planning theory and practice have likely been preoccupied with the health of urban living. After all, starting in the 19th century, the initial attempts to bring order to architectural and social settings through zoning, parks, slum removal, and other measures were made to clean up the excesses of the industrial metropolis. However, especially when health crises were urban phenomena, as it was during the 2003 global SARS epidemic, academics and professionals looked closely at urban planning to assess the specific intersections of planning practice with disease outbreaks and interventions (Ali et al., 2022).

Surely, it is challenging to get to an agreement on how urban planning techniques can manage the COVID-19 pandemic. To accomplish it with the least amount of harm, it should be managed in all of its dimensions. At this time, one of the key axes of the struggle process should be developing

*(Corresponding author), Assist. Prof. Dr., Gebze Technical University, Türkiye, denizgalantini@gtu.edu.tr
Article history: Received, 03 October 2023, Accepted, 01 December 2023 Published, 31 December 2023

the most "resilient" urban systems and addressing the social and urban requirements coming from this unanticipated pandemic in the most sustainable manner possible. As Yaman-Galantini (2021) emphasized, today it is understood that unexpected changes are especially related to environmental problems, that is to say, because of ignoring the environmental dimension in urban development decisions. Unexpected problems such as climate change are created because of this ignorance. Given the uncertainty and complexity that come along with modern urban processes, a static planning approach is currently even less effective to address the negative consequences of the pandemic. Therefore, more complicated methods to urban planning are now required in circumstances where the future appears to be increasingly unclear due to unanticipated developments, not only to minimize global hazards, including pandemics, but also to manage the changes brought about by risks (Figure 1). This means that goals and tactics of urban planning paradigms must alter since we are in an extraordinary period of global interconnectedness and transition.

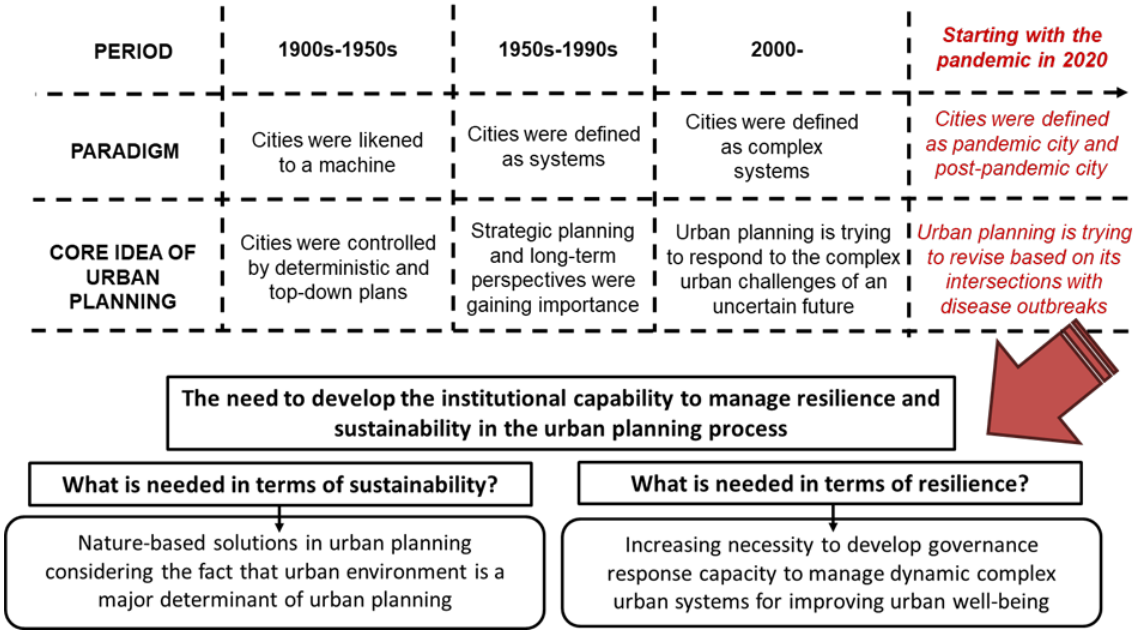

Figure 1 Transformation in Urban Planning Paradigms with the COVID-19 Pandemic (Developed from Yaman-Galantini (2019))

Since its first discussions in 1970s, sustainability-based planning paradigms have been searching for the "ideal city" and meanwhile in the 2000s, there has been an evolution of new ideas in the definitions of urban sustainability (Yaman-Galantini, 2021). The underlying principle is the necessity of cities to be in a harmony with nature. As Newton and Bai (2008) also argue that, since resources become more limited for development in the 21st century in important areas like water, oil and gas, food, and some building/manufacturing materials, the pursuit of transition toward sustainability gets dominant in sustainability science, which studies interactions among complex systems.

In this context, significant issues are raised: How can we develop governance response capacity to successfully manage the challenges of this complexity? Are natural disasters genuinely unexpected if humanity attempts to dominate nature? As a result, developing readiness for the unexpected assumes basic relevance in resilience-based urban planning. The concepts of sustainability and resilience take on essential significance in modern urban planning due to this setting. To counteract the pandemics, it is vital to identify how these notions might be promoted based on their characteristics.

The next part focuses on the basic characteristics of the pandemic city and the post-pandemic city. Following the brief discussion of the literature's inclusion of those notions, the subject of how

sustainability and resilience attributes should be determined in urban planning within these concepts' framework will be addressed.

2. Pandemic City and Post-Pandemic City

According to Ali et al. (2022), it wasn't difficult to predict the importance of cities as the source of a potential pandemic before 2020, considering the particular significance of changing urban political ecologies and pathologies of demographic, infrastructural, and governance change. Cities, in particular, become the actual hubs of societal change. The increasing tendency to work from home and the closing of restaurants and other entertainment venues pushed for a re-evaluation of daily life, with a shift in emphasis on housing, children, the elderly, and the neighborhood (Ali et al., 2022).

With the increase in the transmission rate of the COVID-19 pandemic and the start of the quarantine around the world, the relationship between pandemic and space has started to be widely discussed. The definition of space has changed, and there have been many disputes about what people expect from space. Various studies have been carried out on this change in space and on which prominent concepts urban planning should be developed in the pandemic city.

For instance, Jasiński (2022) addressed the characteristics of the pandemic city as density and space, mobility, and public transportation and public versus virtual space. According to him, curfews, and social isolation requirements were among the public health measures implemented by the government during the COVID-19 pandemic, restricting both mobility and civil liberties. However, travel restrictions, industry closures, and a decrease in public transportation emissions caused by the pandemic improved the air quality in cities all around the world. People started to commute by walking, bicycling, or driving their own cars, changing their daily routines. Cities have started implementing sustainable transportation options, such as restricting car access and enlarging bicycle and pedestrian lanes, to improve their urban environments. With public health guidance including social distance, more outdoor space, and safer streets principles, the crisis may mark the beginning of responsible, environmentally friendly urban transportation (Jasiński, 2022). Similarly, Martinez and Short (2021) explains that COVID-19 has resulted in a drop in traffic and a move away from car-dependent communities. As a result, urban public spaces were reimagined, with certain streets turning into pedestrian-only zones. City officials are encouraging walking and bicycling while decreasing traffic and using public transportation. Public transportation has also been impacted by the pandemic, with demand drastically falling as a result of work-from-home policies. Passengers are less likely to use public transportation due to the health advice and an increase in time spent in close proximity to other people (Martinez & Short, 2021).

However, some urbanist dogmas were called into question by the COVID-19 pandemic. Jane Jacobs, one of the leading figures of the modern urban movement, praised the advantages of vibrant street life and high building density, but also noted that dense population concentration was a prerequisite for the development of urban diversity. Large private spaces are now a luxury only for the privileged. There is a decline in public spaces and social activities (Jasiński, 2022). Martinez and Short (2021) also analyzed that urban public places, which are essential for fostering intimacy on a social and psychological level, have been forced to closure because of the pandemic.

In all civilizations, there is an important interaction between the characteristics of urban environments and the behavior of urbanite. People with high incomes are protected from other potential sources of infection by their private gardens, roof terraces, etc. While families living in apartment blocks could only see outside world through windows or at most from their balconies, wealthy people with their own private houses, and gardens did not have to experience the harsh and claustrophobic effects of repeated restrictions. A quarter of the world's urban population, living in low-quality housing, often without access to clean drinking water and basic amenities, faced the most severe impacts of the pandemic (Jasiński, 2022).

Moreover, Jasiński (2022) points out that the role of information technology in pandemic has increased as digital space becomes a platform for sharing information and enabling human interactions. The pandemic has provided momentum for smart city development, telemedicine, online commerce, and education, as well as surveillance systems. It offered an opportunity to develop resilient city planning and efficient disaster risk management. However, it also presented an opportunity to strengthen electronic surveillance and control over population.

Besides the spatial challenges cities face with the pandemic, in their work “Everyday urbanisms in the pandemic city: a feminist comparative study of the gendered experiences of COVID-19 in Southern cities” Razavi et al. (2022) detected that with the COVID-19 pandemic, changes in spatial-temporal ordering have exacerbated racial and gendered exclusions, as seen in women's daily life. In addition, a lack of mobility as well as the various features of production and social reproduction have increased the amount of aggression, and stress on mental health. On the other hand, throughout the pandemic, social reproduction solidarities that support both the old and new care circuits have become stronger (Razavi et al., 2022).

Last but not least, Sokol (2021) conducted a study on the effects of the pandemic on cities through a scenario in which the coronavirus does not lose its effect and the pandemic does not end. In this kind of scenario, coronavirus will continue to have a serious health concern in the pandemic city. Further economic and financial harm will result from the ongoing health crisis, with serious joblessness, homelessness, and housing markets. However, not everyone in society will experience the economic and financial suffering equally. There is reason to think that some societal segments will be affected more severely than others, which will lead to an increase in social polarization. Spatial and social polarization will coexist in these cities, both inside and between them. Simply, some cities and regions within cities will perform far better than others. Uneven social and economic consequences will further polarize politics. The political landscape will become more disjointed and unpredictable, with extremist movements becoming more mainstream. For example, it will be impossible to reach the crucial consensus on how to address the climate disaster in the face of such political polarization. The environmental problems will worsen as a result. It is not doubtful that law and order will collapse in the face of escalating environmental disasters which will be exacerbated by the economic, financial, social, and political crisis. It will also become harder to implement any public health precautions to stop the virus from spreading as law and order in cities crumbles. The pandemic will only spread faster as a result, and the crisis's many facets will only get worse. There will surely be attempts to put technology solutions into place when faced with such a vital circumstance. These solutions, though, will simply exacerbate polarization in urban areas. Some people may benefit from an expanding array of innovative online services and technology-enabled solutions, while others will be completely cut off from these services and experience: causing social and economic marginalization. This scenario excludes the existence of post-pandemic cities. Instead, the pandemic will last forever, with cities serving as its epicenters. Devastating effects will result from the vicious circle's continuation (Sokol, 2021).

To summarize the main arguments;

- Planning of lower density settlements or increased interest in the countryside rather than the city,
- Advocating the need to adopt planning approaches that include natural conservation concerns,
- The emptying of office buildings as many companies supports working from home,
- Increasing lack of mobility,
- Developing and diversifying the definition of home and private space,
- Preferring private cars as being safe even though public transport is encouraged,
- Increasing racial and gendered exclusions,
- Deeping the gap between rich and poor,
- Increasing social solidarities,

– Providing food and other needs through the internet, leaving shopping centers or other commercial areas unqualified have become the characteristics of the global pandemic city. The traits of the pandemic city can also be summed more extensively in Figure 2.

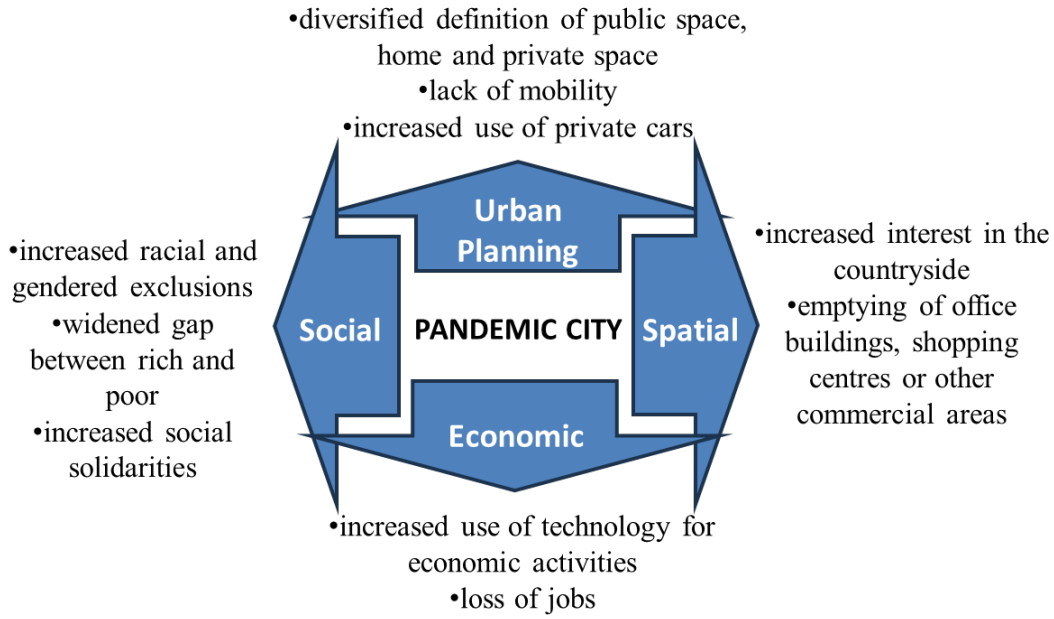

Figure 2 Pandemic City (Own Source)

In this context, although the Covid-19 pandemic has contributed to the significance of natural conservation with small-scale positive progresses such as the increase in the importance of urban public spaces and air quality in many cities, it should be determined what is not sustainable and resilient in the pandemic city and to establish the essential urban planning policies to eliminate the vulnerabilities. For this reason, discussions continue on how the "post-pandemic city" should be.

At this point the term post-pandemic city refers to urban regions that have successfully navigated or will successfully manage the adverse effects of the pandemic by meeting sustainability and resilience standards. Alternatively, it involves cities that can develop the ability to withstand and adapt. Drawing lessons from the past, utilizing governance capacity, and strengthening current capabilities by adjusting them to the changing conditions of the present day should be the main goals while planning the post-pandemic city. All elements identified in the pandemic city that are not sustainable and resilient must be compensated. In order to meet this, while the importance of ecological protection concerns in urban planning paradigms has increased, at the same time, new urban concepts such as 15-minute city or 20-minute city have started to be discussed.

Mölders and Levin-Keitel (2021) emphasized the growing evidence supporting the necessity of creating sustainable cities after the COVID-19 pandemic. While Sharifi and Reza Khavarian-Garmsir (2020) conducted a comprehensive study of 140 published articles that examined the impacts of the pandemic on cities and identified key lessons for urban planning, design, and management. Their findings revealed a heavy focus on improving air and water quality, also shedding light on the disproportionate impact of the pandemic on vulnerable and marginalized communities. Covering various aspects such as environmental quality (air quality, environmental factors, urban water cycle), socio-economic impacts, management, and governance (including smart cities), transport and urban design (Bharule et al., n.d.), which provide valuable insights into the sectors that should be prioritized in post-pandemic urban planning guidelines.

Just to give an example, the pandemic has brought attention to the need for equitable living conditions in cities that consider both space quantities and spatial qualities for all citizens (Mölders & Levin-Keitel, 2021). It may be necessary to reduce density and reevaluate public areas in the post pandemic metropolis. Since lower income groups could rely more on urban public places for social

meetings, this redesign may have redistributive effects (Martinez & Short, 2021). Sector-based divisions of urban planning organizations allow for the use of urban planning instruments as well as existing normative aims to address current crisis-related difficulties. By establishing a connection between the current situation and the desired outcomes, transformational knowledge highlights the significance of the transformational process. With different approaches offering insights into weaknesses, threats, strengths, and opportunities for different ways of taking decisions that lead to more and better transformative knowledge, there is an increasing demand for a more collaborative approach to building more livable cities (Mölders & Levin-Keitel, 2021).

Relatedly, Balducci (2022) points out the diversity that we have steadily lost since Jane Jacobs' denunciation in 1960, the containment of spatial inequality that has not been addressed, the quality of the environment sacrificed in favor of efficiency, the re-appropriation of public space for people, the breaking of the rigid relationship between form and function of buildings and other structures. These are just a few of the issues that must now be on the agenda for cities and require thought, strategy, and courage. Sewage systems, building codes, or straightforward reconstructions won't be sufficient this time.

It would be unrealistic to say that human beings are in control of the changes that result from their interventions in nature in order to develop and progress. However, through a comprehensive system planning approach, it is possible to develop the capacity to adapt to out-of-control developments and ultimately restore balance. For this, in addition to sustainability, resilience needs to be found at the joint of the balanced interaction with spatial and social dynamics and governance capacity in the post-pandemic urban planning paradigms. The existence of a balance between the protection and utilization of the natural environment in the spatial perspective, the consideration of natural thresholds in urban development decisions on the basis of the concept of sustainability aside from ensuring socio-economic and social equality will enable the creation of resilience with a holistic approach. So, it should be emphasized that the development of sustainability and resilience capacity essentially depends on the urban planning stakeholders and the relations among them. This is because a clear definition of the stakeholders and the relationship between them is the basis for the creation of tools such as urban plans, strategies and laws that will improve sustainability and resilience through common sense and cooperation, as well as ensuring social resilience. Therefore, prominent post-pandemic urban planning approaches can be summarized in Figure 3.

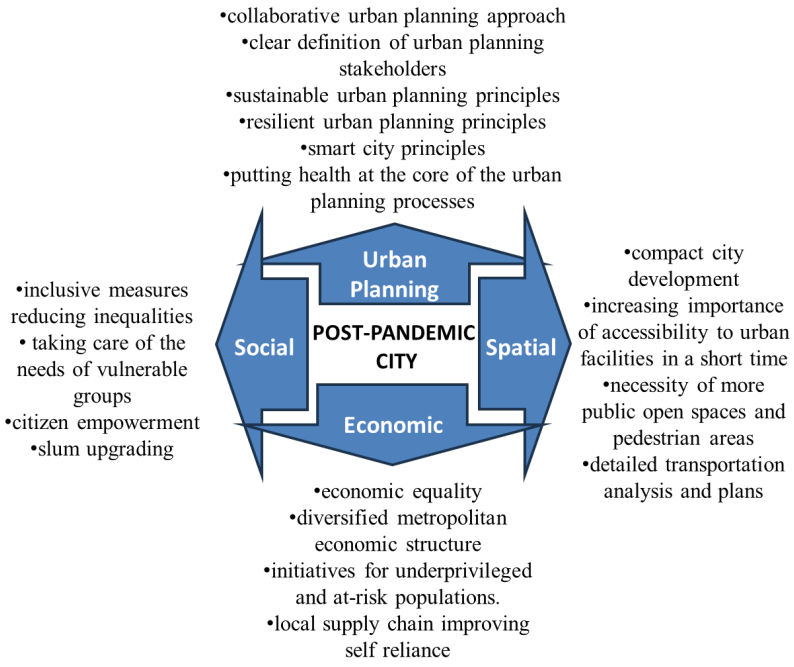

Figure 3 Post-Pandemic City (Own Source)

The important point here is to determine which qualities of sustainability and resilience needed to be highlighted while shaping the post-pandemic city. The next section clarifies this issue.

3. Attributes of Sustainability and Resilience in Post-Pandemic Urban Planning Paradigm

At the very beginning of the study, it was asked "how is it possible we are still experiencing this outbreak even though "resilience" and "sustainability" principles are ingrained in urban planning paradigms?". The COVID-19 pandemic has shown that not only a change in urban planning practices is necessary, but also it is inevitable that this required change in urban planning approaches must be continuous in order to secure human health. Then, in the post-pandemic period, the competitive advantages of cities should include indicators such as sensitivity to environmental thresholds, robustness of resilience capacity, and adoption of healthy city principles. Again, important lessons learnt from nature and the events of the recent past are essential for cities to cope with future threats. Thus, it is vital for cities to learn to manage uncertainty through anticipatory planning strategies, implementing sustainability-based policies, and developing adaptive capacity to cope with shocks. To form the basis for the determination of these indicators, which should be evaluated on a city-specific basis, it is of great importance to reconsider the concepts of sustainability and resilience, which are two dominant concepts in the current urban planning literature.

When we analyze the literature, we see that the idea of providing the mentioned dynamic structure in urban planning has been discussed since the 2000s. For example, in the e-discussion "The Future of Sustainability: Have Your Say!" organized by IUCN in 2006, 460 registered participants from over 70 countries discussed new models that see ecosystems as the cornerstone of economy and society or life support systems instead of the traditional three-pillar sustainable development model. They emphasized the significance of moving beyond abstract ideas and assisting actual communities in implementing sustainable development on the ground, noting how the idea of sustainable development had been misappropriated and politicized. The discussions addressed to advancements in sustainability sciences, fresh insights into cultural diversity, and calls for improved communication between scientists and the general public in the 21st century (Jeanrenaud, 2007).

Likewise, according to the Australian case study conducted by Newton and Bai (2008), it is essential to adopt a modified decision-making process that deviates from the traditional sustainability strategy in order to create an ecologically sustainable future. While acknowledging that many important components of society are not concentrated around economic activity, this new perspective recognizes that the economy is a crucial component of society. In essence, it illustrates how completely dependent human civilization is on the limitations set by the natural environment of our world. As a result, it is crucial to include ecological factors in all facets of social and economic planning (Figure 4).

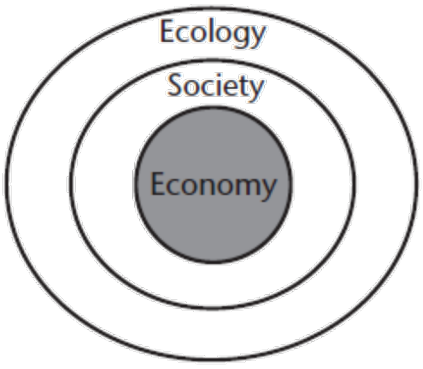

Figure 4 Framework for Ecological Sustainability in Decision-Making; Adapted from Newton and Bai (2008) quoting Lowe (1996)

Hence, as Newton and Bai (2008) recommended, an appropriate framework must be conceptualized to make the transition to more sustainable cities. Since Brundtland (1987),

sustainability has become a new and potent driving force, influencing how the government, business, and community view urban development. In terms of how future urban systems are planned, developed, and operated, it is the area where considerable shifts are needed. This means that, it is essential to develop more exact models, metaphors, and metrics that effectively portray the interaction between human actions and the environment to lay the groundwork for sustainability. In addition, strengthening governance competence necessitates a dedication to ongoing improvement. As a result, society as a whole needs to adopt this culture of effective management.

According to Orr (2002), to guarantee the fair transfer of wealth through generations, governments must be influenced by a morally upright and well-organized public. An informed populace can also actively engage in political decision-making and take ownership of how those decisions are carried out. Governments can increase social resilience by putting resilience strategies in place to deal with unforeseen shocks where a culture of active engagement in building sustainable cities develops. Once again, Orr (2002) highlights that the continuation of society depends on a sequence of public decisions that require for strong state institutions and politically active, informed citizens.

It is crucial to create a better connection between resilience and sustainability at this turning point, where the commitment for constant change in urban planning strategies is clear. The COVID-19 pandemic has highlighted how crucial it is to think about resilience and sustainability as related ideas when constructing cities. By uniting these two fields, we may create an urban development strategy that not only protects human health but also strengthens our capacity to withstand and respond to new challenges. In any case, it is already impossible to resist developing a new agenda for this new era, that is centered on how to maintain sustainability while ignoring uncertainty and complexity. Today the main characteristics of sustainability which are the provision of needs, development and inter and intra-generational equity-justice in terms of resource maintenance should be updated based on non-linearity. Therefore, as Yaman-Galantini and Tezer (2018) suggested, sustainability should be updated and upgraded based on today's needs, developments and equity approaches considering resilience perspective.

The main challenge is to achieve sustainability requirements while offering uncertainty responses. Therefore, in an evolutionary system with ongoing development, it is impossible to name any ideal state, stable equilibrium, or optimal development route. Therefore, it can be deduced that the fundamental characteristics of resilience should refer to a continual process

of learning, adapting, and changing in order to give the principal appraisal of sustainability. According to Novotny et al. (2010), this requirement gives sustainability its dynamism or in other words, makes it an inherently moving target that accounts for a process of continuous development.

To underline what it relates to, resilience is defined as a city's potential to manage, adapt, cope with unexpected changes/crises and develop capacity against the unexpected. According to Brand and Jax (2007), it is a comprehensive notion that describes a socio-ecological system's capacity to handle uncertainty and unanticipated changes as well as its ability to manage, adapt, and control change. Servillo and Reimer (2013) define resilience as the capacity to return to normality in the face of threats resulting from change. Alternatively, it refers to a complex socio-ecological system's capacity to alter, adapt, and transform rather than a return to normalcy. In terms of the principle of the strongest survives, Davoudi (2012) describes it as an evolutionary strategy. She contends that systems' nature can change over time without the intervention of an outside force or a genuinely dangerous threat.

Integrating resilience into urban planning demands considering three key viewpoints, building on the idea of continual learning and adaptation. These viewpoints operate as fundamental concepts for successfully integrating resilience into planning procedures. Accepting these viewpoints will help us promote a smoother and more efficient shift to resilience-based planning.

They are also fundamental for the groundwork for a more flexible and adaptable strategy for sustainable development. Besides, they make use of the concept's evolutionary meaning to better manage change and enhance cities' capacity for quick recovery.

In their SPARK project, where they suggested a resilience-based strategic planning approach, Dos Santos and Partidário (2011) recognized innovation, continuous learning, and stakeholder communication as critical factors for the planning process to have the capacity to manage change. According to Davoudi et al. (2013), who utilized the definition of evolutionary resilience for the London climate change adaptation strategy, adaptation to climate change is a continual process including social and organizational learning. However, Lu and Stead (2013) identified six significant obstacles to enhance Rotterdam's resilience to climate change while also fending off external threats and returning to normalcy. Goals must be set, initiative must be made, public activities must be prioritized, trends and potential hazards must be considered, and failures must be learned from. The examples show how resilience's dynamic character -derived from its evolutionary definition and the objective of defining a system that is ready for unexpected changes- can offer a process in contemporary urban planning practices, help us create awareness against uncertainties by adding a new perspective to planning.

In this context, the main strategy for fighting the pandemic should be to use urban resilience as a major idea in achieving governance success. Lebel et al. (2006) identified three characteristics that are necessary for resilient governance in their study, "Governance and the capacity to manage resilience in regional social-ecological systems": Participation, multifaceted institutions with multiple levels, and accountable authorities make up the first three. In order for the society to have faith in the management, to mobilize, and to be aware of living/acting collectively, it is crucial to assure involvement in planning procedures in the context of the battle against the pandemic. The combined efforts of all players are necessary for society to fight the pandemic in a resilient manner.

The ability to produce greater information flow, cooperation, coordination, and social solidarity depends on the participation of more stakeholders from various scales. We must learn to live together, as the pandemic's most crucial lesson is to remind us. According to Mulligan et al. (2016), social coherence, inclusiveness, and solidarity all contribute to social resilience. Having a responsible authority is obviously necessary for managing the procedure effectively and getting responses quickly. The ability of vulnerable groups in society to adapt can be managed in this way. The role of local governments in this process is significant too. Eliminating the issues affecting public health services and the complaints of people who have experienced financial losses are critical priorities.

Making spatial plans with pandemics and other potential disasters in mind is a crucial part of the urban resilience viewpoint in the fight against the pandemic. Urban planning is critical to developing emergency action plans for dealing with catastrophes, calculating the likelihood that hazards would be faced, figuring out what to do in these circumstances, and eliminating or lessening the risks that may result from them. A planning system that permits the improvement of physical environmental conditions can be a key element in reducing the occurrence and spread of diseases, according to the theory that pandemics are particularly caused by environmental problems. People are in constant communication with one another because they can continue to live as a community. Infectious diseases spread swiftly from one infected individual to another. The pandemic thus demonstrates a geographical spread.

According to this perspective, pandemics have both social and spatial elements. The pandemic spreads more quickly as the more mobile the population is. By this time, it is clear once more how crucial planning scale is to the fight against the pandemic. According to Wilbanks (2009), when defining society, it is important to consider how geographic scale affects sustainability and resilience. The "think globally, act locally!" philosophy, one of the cornerstones of sustainability, emphasizes that the key to winning the societal and international battle against the pandemic is to

successfully implement local solutions. Coincidentally, the idea of urban resilience does one of the most significant contributions to the creation of spatial plans in the neighborhood scale.

Resilience plans might differ greatly at the neighborhood level depending on the type and intensity of the vulnerabilities that are present. A customized approach to resilience development is possible by having a thorough understanding of the particular difficulties that various areas encounter. Infrastructure quality, environmental dangers, and socioeconomic conditions are only a few of the variables that affect how vulnerable and adaptable a community is. Urban planners can construct context-specific solutions that improve resilience and build more resilient and inclusive communities by identifying these variables. Additionally, working on this local scale may be simpler to provide the additional funding, support, or accessibility required to achieve resilience standards. For instance, while access to a broader variety of resources might be feasible at the macro scale, it might be possible to make decisions more quickly due to simplified decision-making processes at micro scale. Therefore, by removing the risks experienced at the local scale, urban resilience can be attained more quickly. Also, the neighborhood scale is important because it's a scale where social organization and solidarity can be achieved more quickly, as well as by making common public areas and services easily accessible and preventing people from moving around excessively and crowding the streets to meet their needs during the pandemic. For this purpose, it is necessary to re-evaluate urban planning standards, to change the area requirements and accessibility distances required by the services in accordance with the population, and to carefully plan areas that may serve a purpose other than their current use (e.g., health service area, accommodation area, storage area, etc.).

It is also essential to take social factors into account while evaluating spatial issues. Spatial planning should deliberate the connections between physical locations and social interactions in the context of the current pandemic. Effective resilience practices can be improved by knowing how spatial arrangements affect social dynamics. Urban planners may develop environments that improve both the physical and social resilience of communities by supporting accessible and inclusive public places, encouraging community engagement, and planning neighborhoods that encourage social connections. Through the integration of spatial and social factors, this integrated approach ensures a comprehensive understanding of urban resilience. Likewise, as Rönkkö et al. (2022) expressed, for cities to be pandemic-proof, the socio-cultural component of resilience is essential because it enables people to adapt both collectively and individually amid severe health crises. In order to retain coherence when experiencing social isolation, resilience-building techniques should consider psychological resilience. The pandemic has brought attention to socio-spatial imbalances, as well as the value of family and community assistance, particularly for the urban poor residing in slums and informal settlements (Rönkkö et al. 2022).

The ability of all societal groups to work together will guarantee the prevention of the pandemic's further spread. It is critical to adopt planning strategies that effectively combine society and space to perform this, in addition to taking spatial considerations into account while planning cities. The process of integrating resilience into urban planning also includes establishing and executing spatial design principles that support social resilience. Therefore, it is essential to plan the built and natural environments in a way that highlights the community's assets. For instance, Carpenter (2013) claimed that neighborhoods with walkable and mixed usage see an increase in social capital and sense of belonging. According to Berkes and Ross (2013), a strong urban plan that emphasizes social phenomena like social values and beliefs, knowledge, skills and learning, social networks, a diverse and innovative economy, human-space connection (also known as belonging), collaborative governance, and the ability to accept change can create the foundation for social resilience.

Lastly, in Figure 5, the proposed intersections between sustainability, resilience and governance and their prominent attributes in the post-pandemic urban planning paradigm are summarized. The important point is that when planning post-pandemic cities, planning practices should have the aim of capacity building to support an equitable and fair development through;

- Providing basic needs and stability in the city even in the most difficult times,
- Being able to continuously improve its knowledge and technical infrastructure against all possible threats,
- Identifying governance tools that will take responsibility for ensuring intergenerational justice to access basic resources and,
- Prioritizing ecological concerns in planning processes.

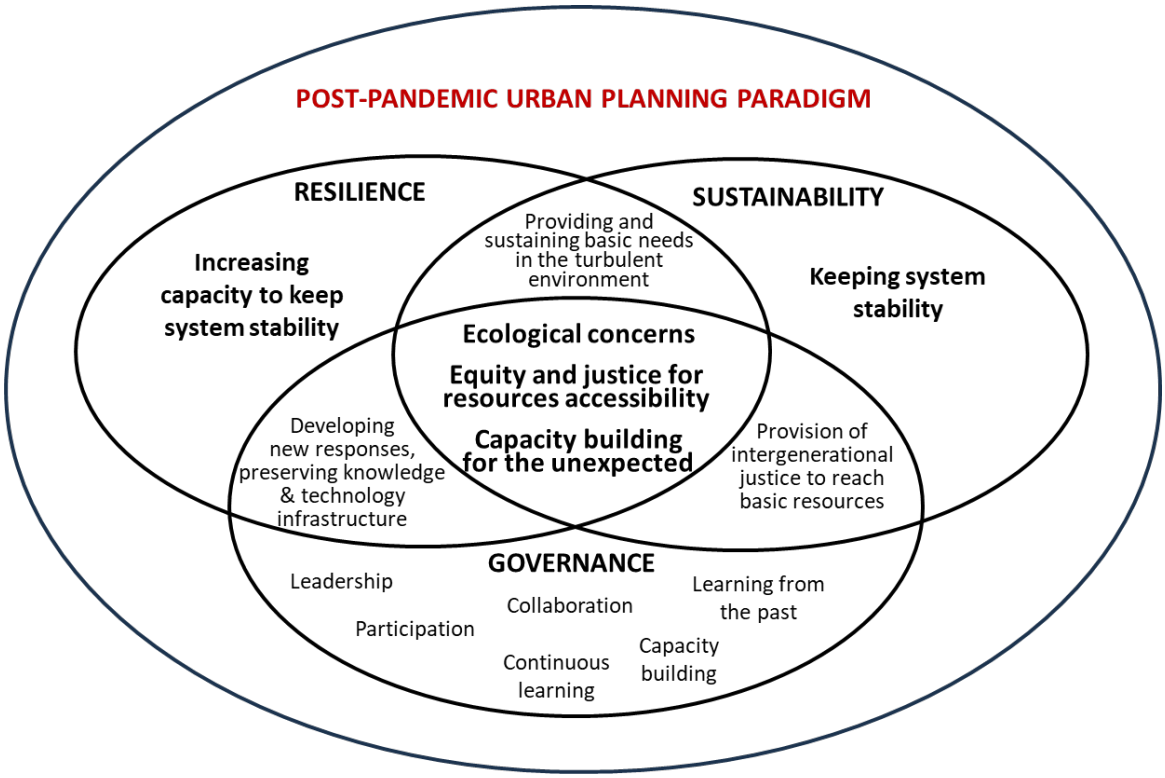

Figure 5 Key Components of Post-Pandemic Urban Planning Paradigm (Own Source)

To sum up, when we look back, we see that the concept of sustainability and resilience have been known for years, expressed on national and international platforms, and reminds us of the priorities necessary to solve chronic problems. The governance capacity and basic spatial strategies described within the scope of sustainability and resilience criteria in combating the pandemic are not new definitions. However, this recent perspective, with its emphasis on the possibility of the devastating impacts of unexpected changes at any time, gives us a comprehensive top heading idea arguing that these issues should be refocused today.

4. Conclusion

In conclusion, the COVID-19 pandemic has damaged our ability to live in urban environments that have been developed over many generations and it has exposed the weaknesses of cities. There is no denying the importance of historical learning for contemporary cultures. Even though cities have historically faced a variety of difficulties, including wars and pandemics, it will be more central to be more prepared for disasters in the future. Simply repeating past errors would cost more in the long run.

We must admit that the uncontrolled and continual growth of cities runs counter to the natural processes that are essential to human welfare. To attain urban sustainability and resilience or build the essential capacity to successfully handle upcoming crises, our existing understanding of policy and governance is insufficient. Therefore, using what we've learned from handling the unexpected pandemic we recently experienced, we need to make bold decisions that combine livability with the capacity to adapt to the unknowable.

We can rethink and reshape cities that are more equipped to face the problems that lie ahead by adopting a more holistic approach. This necessitates re-examining our methods for urban development, encouraging sustainable expansion, and emphasizing resilience in urban planning and governance. Additionally, it calls for increasing stakeholder cooperation and knowledge exchange, utilizing the potential of technology and innovation, and contemplating the social, economic, and environmental elements of urban life. By doing this, we may work to build cities that are more sustainable, inclusive, and supportive of the well-being and prosperity of their citizens as well as more robust to upcoming crises. We can build cities that are better prepared to navigate the challenges of an uncertain future by taking lessons from the past and utilizing our combined experience.

References

Ali, S. H., Connolly, C., & Keil, R. (202f2). Pandemic urbanism: Infectious diseases on a planet of cities. (No Title).

Balducci, A. (2022). The key of preparedness. In Armondi, S., Balducci, A., Bovo, M., & Galimberti, B. (Eds.). (2022). *Cities Learning from a Pandemic: Towards Preparedness* (1st ed.). pp. 13-23, Routledge. https://doi.org/10.4324/9781003240983

Berkes, F., & Ross, H. (2013). Community resilience: Toward an integrated approach. *Society and Natural Resources 26* (1), 5-20. https://doi.org/10.1080/08941920.2012.736605

Bharule, S., Takahashi, K., Kudo, S., Wee, V. & Ram, S. (n.d.). Rethinking Cities for Resilience and Growth in The Post- COVID-19 Pandemic Era, *Policy Note*. [online, cited 20.06.2023]. https://www.adb.org/sites/default/files/event/723361/files/adbi-pn-rethinking-cities-resilience-growth-post- COVID-19-pandemic-era.pdf

Brand, F.S. & Jax, K. (2007). Focusing the meaning(s) of resilience: resilience as a descriptive concept and a boundary object. *Ecology and Society 12* (1), 23.

Brundtland, G. H. (1987). Our common future—Call for action. *Environmental conservation, 14*(4), 291-294.

Carpenter, A. (2013). Social Ties, Space, and Resilience: Literature Review of Community Resilience to Disasters and Constituent Social and Built Environment Factors. *Community and Economic Development Discussion Paper* No. 02-13.

Davoudi, S. (2012). Resilience: A Bridging Concept or a Dead End? "Reframing" Resilience: Challenges for Planning Theory and Practice Interacting Traps: Resilience Assessment of a Pasture Management System in Northern Afghanistan Urban Resilience: What Does it Mean in Planning Practice? Resilience as a Useful Concept for Climate Change Adaptation? The Politics of Resilience for Planning: A Cautionary Note. *Planning Theory & Practice 13* (2), 299-333.

Davoudi, S., Brooks, E. & Mehmood, A. (2013). Evolutionary Resilience and Strategies for Climate Adaptation. *Planning Practice & Research 28* (3), pp. 307-322, https://doi.org/10.1080/02697459.2013.787695

Dos Santos, F.T. & Partidário, M.R. (2010). SPARK: Strategic Planning Approach for Resilience Keeping. *European Planning Studies 19* (8), pp. 1517-1536.

Gandy, M. (2006). The bacteriological city and its discontents. *Historical Geography 34*, pp. 14–25.

Jasiński, A. (2022). COVID-19 pandemic is challenging some dogmas of modern urbanism. *Cities 121*, https://doi.org/10.1016/j.cities.2021.103498

Jeanrenaud, S. (Eds.) (2007). The Future of Sustainability: Have Your Say! *Summary of the IUCN E-Discussion Forum 2006*. Gland, Switzerland: IUCN. ISBN: 978-2-8317-1035-8.

Lebel, L., Anderies, J.M., Campbell, B., Folke, C., Hatfield-Dodds, S., Hughes, T.P. & Wilson J. (2006). Governance and the capacity to manage resilience in regional social-ecological systems. *Ecology and Society 11* (1), 19.

Lowe I (1996). *Towards ecological sustainability. In Australia State of the Environment, State of the Environment Advisory Council*. pp. 10–30. CSIRO Publishing, Melbourne.

Lu, P. & Stead, D. (2013). Understanding the notion of resilience in spatial planning: A case study of Rotterdam, The Netherlands. *Cities 35*, 200–212.

Martínez, L. & Short, J.R. (2021). The Pandemic City: Urban Issues in the Time of COVID-19. *Sustainability 13*, https://doi.org/10.3390/su13063295

Mölders, T. & Levin-Keitel, M. (2021). Sustainable (Post-) Pandemic Cities?. *Contested forms of knowledge in urban transformation. planung neu denken 2*, 151-163.

Mulligan, M., Steele, W., Rickards, L. & Fünfgeld, H. (2016). Keywords in planning: what do we mean by 'community resilience'? *International Planning Studies*, *21*:4, 348 361 https://doi.org/10.1080/13563475.2016.1155974

Newton, P. & Bai, X. (2008). Transitioning to Sustainable Urban Development. In Newton, P.W. (Eds.) *Transitions: Pathways to Sustainable Urban Development in Australia*, pp. 3–19, Springer: Dordrecht, The Netherlands.

Novotny, V., Ahern, J., & Brown, P. (2010). *Water Centric Sustainable Communities: Planning, Retrofitting and Building the Next Urban Environment*. J. Wiley, Hoboken, NJ. https://doi.org/10.1002/9780470949962

Orr, D. W. (2002). Four challenges of sustainability. *Conservation Biology 16* (6), 1457-1460.

Razavi, Adeniyi-Ogunyankin, G., Basu, S., Datta, A., de Souza, K., Ting Ip, P. T., Koleth, E., Marcus, J., Miraftab, F., Mullings, B., Nmormah, S., Odunola, B., Burgoa, S. P., & Peake, L. (2022). Everyday urbanisms in the pandemic city: a feminist comparative study of the gendered experiences of COVID-19 in Southern cities. *Social & Cultural Geography*, (ahead-of-print), 1–18. https://doi.org/10.1080/14649365.2022.2104355

Rönkkö, E., Juuti, E., & Hentilä, H.L. (2022). Resistant, responsive, resilient cities: Urban planning as a means for pandemic prevention, In *IOP Conference Series: Earth and Environmental Science*, vol. 1122, no. 1. https://doi.org/10.1088/1755-1315/1122/1/012006

Servillo, L. & Reimer, M. (2013). Strategic Spatial Planning and Institutional Resilience: Theoretical Thoughts and some Empirical Devices. In *Proceedings of AESOP -ACSP 5th Joint Congress*, Dublin, Ireland, 15-19 July.

Sharifi, A. & Khavarian-Garmsir, A.R. (2020). The COVID-19 pandemic: Impacts on cities and major lessons for urban planning, design, and management. *Science of the Total Environment 749*, https://doi.org/10.1016/j.scitotenv.2020.142391

Sokol, M. (2021) The post-pandemic city: what could possibly go wrong. *GEOFIN Blog #11. Dublin: GEOFIN research*, Trinity College Dublin. Available online at https://geofinresearch.eu/outputs/blog

Wilbanks, T. J. (2009). How geographic scale matters in seeking community resilience. *CARRI Research Report 7*. Oak Ridge, TN: Community & Regional Resilience Institute, http://www.resilientus.org/wp-content/uploads/2013/03/T_Wilbanks_CARRI_Report_7_Final_1257273817.pdf

World Commission on Environment and Development (1987). Brundtland Report, *Our common future*. Oxford: Oxford University Press.

Yaman-Galantini, Z.D. & Tezer, A. (2018b). Review: In the complex epoch is sustainability "out" resilience "in"?, *ITU AZ Journal, 15* (3), 41-59. https://doi.org/10.5505/itujfa.2018.77598

Yaman-Galantini, Z.D. (2019). Belirsizliklere Karşı Kurumsal Dayanıklılık ve Beş Bileşenli Kent Planlama Süreci (Institutional Resilience against Uncertainties and Five-Elements Process in Urban Planning Process), İçinde *Dünya Şehircilik Günü 43. Kolokyumu: "Planlama, Kavramlar ve Arayışlar"*, TED Üniversitesi, Ankara, 7-9 Kasım.

Yaman-Galantini, Z.D. (2021). Kentsel Dayanıklılık Perspektifinde Salgınlarla Mücadele (Analysis of Struggling with Pandemics from Urban Resilience Perspective). *Mimarlık 417*, 31-34.

Resume

Urban and regional planner (PhD) and urban policy expert Zeynep Deniz Yaman Galantini obtained her bachelor's degree from Istanbul Technical University-Department of Urban and Regional Planning (university degree) in 2006. Then, with a scholarship from Politecnico di Milano University, she completed the MScs Program "Urban Planning and Policy Design" with full score in 2008. Her master thesis was about the poverty alleviation policies and "Conditional Cash Transfers" in Turkey. She completed the PhD program of Urban and Regional Planning in Istanbul Technical University with the thesis entitled "Urban Resilience as A Policy Paradigm for Sustainable Urban Planning and Urban Development: The Case of Istanbul". Her thesis got the "Most Successful Doctorate Thesis Award of 2018". Currently, she is an Assistant Professor and Deputy Head in Gebze Technical University in Urban and Regional Planning Department, and her studies focus on urban resilience, resilient urban policy design and sustainable urban development.