URBAN RESILIENCE AND PEOPLE´S ENGAGEMENT

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ABSTRACT

Current crises prompt a renewed discussion about the social resilience of communities. In this study, we examine the factors influencing perceptions of resilience at the local level across nine European countries. We recognize that different factors hold varying significance for individuals' perceptions of resilient communities. Utilizing data from an online survey with 586 respondents, we explore how resilience is perceived and identify the factors that can enhance it. Our findings underscore the importance of environmental issues in shaping perceived local resilience, followed by social relationships and community activities. Economic conditions have a comparatively lesser impact on perceptions of resilience; however, all three dimensions – environmental, social, and economic – positively contribute to perceived resilience. Interestingly, our analysis indicates that collaboration across the public, business, and nonprofit sectors does not significantly enhance perceived resilience.

Keywords: social resilience, individual perception, local development, engagement, stakeholders

INTRODUCTION

Resilience in urban areas is a multifaceted phenomenon that can be examined from various perspectives within complex systems (Meerow, Newell, & Stults, 2016). This complexity necessitates strengthened collaboration among diverse stakeholders, including local administrations and civil society. Numerous case studies have investigated resilience in the context of disasters and shocks, such as earthquakes (Song, Pandey, Dong, Sharifi, & Subedi, 2022), floods (Lwin, Pal, Shrestha, & Warnitchai, 2020), and climate change (Yazar, York, & Larson, 2022). These studies consider geographical factors alongside technical solutions and urban planning. However, it is important to recognize that resilience is also subjectively assessed based on individuals' knowledge and experiences (Maxwell, Constas, Frankenberger, Klaus, & Mock, 2015); subjective assessments reduce reliance on predetermined indicators and reveal unique relationships residents have with local resources and environments (Harangody et al., 2022).

Our contribution aims to investigate how individuals perceive and act to enhance resilience. Specifically, we seek to understand the subjective dimensions of resilience by examining individual perceptions and behaviors that contribute to a perceived high level of resilience within local contexts. We will also explore how these perceptions vary depending on specific places and situations (Collinge & Gibney, 2010; Mehmood, 2016; Vale, 2014), as well as the complexities inherent in social and ecological systems (Shafiei Dastjerdi et al., 2021). Up to now, only a few studies have emphasized subjective methods for assessing resilience, highlighting individuals' understanding of their resilience and its influencing factors (Maxwell et al., 2015).

By incorporating the perceptions of those facing resilience challenges into our analysis of urban environments' adaptability strategies at both individual and collective levels, we will provide insights that standardized frameworks may have overlooked (Jones, 2018). This focus on individual behaviour underscores the need to explore not only technical aspects but also the social micro-level of resilience. To further explore this topic, we have identified several research gaps that have been transformed into research questions: How do local conditions influence resilience? What factors affect resilience? To address these questions, we will investigate the role of social, economic, and environmental factors in shaping perceived local resilience.

The article is structured into four main sections. In the first section, we provide a conceptual outline of social resilience, examining the role of local context, trust, and social capital, and how these elements relate to subjective assessments of resilience. Following this, Section 2 details the methodology employed in our research before presenting the results in Section 3. Finally, we conclude with a discussion that synthesizes our findings and emphasizes their implications for understanding resilience in urban contexts.

SOCIAL RESILIENCE

Social resilience refers to the capacity of individuals and communities to respond to unexpected events and adapt to social, economic, or environmental challenges. It encompasses the ability to withstand disruptions while maintaining essential functions and fostering social cohesion. Key factors such as strong social networks, effective communication, and community engagement are crucial in enhancing social resilience. Ultimately, it reflects how well a community can navigate change and uncertainty while promoting collective well-being.

In our case, we focus on resilience at the local level, where it is easier to study the roles of social capital, empowerment, and civil society activities within neighborhoods (Maclean, Cuthill, & Ross, 2013; Saja, Teo, Goonetilleke, & Ziyath, 2021). Moreover, at the local level, the concept of social resilience is more readily measurable (Asadzadeh, Kötter, Salehi, & Birkmann, 2017), although it cannot be easily transferred to other contexts due to the variety of factors influencing resilience that depend on social and spatial contexts as well as specific sudden risks (Nguyen & Akerkar, 2020).

Interactions among stakeholders—such as learning opportunities, trust-building efforts, social ties (and social capital), and cohesion—are vital aspects of social resilience. These elements contribute to building capacity for adapting to new situations and crises. Effective multi-level collaboration is also required because of the interconnectedness between social and ecological systems. Maclean et al. (2013) highlight several key components that shape partnerships and collaboration: (i) knowledge acquisition and skills development; (ii) community networks; (iii) connections between people and places; (iv) community infrastructure (basic services and facilities); (v) diverse and innovative economies; and (vi) engaged governance. Citizen participation is perceived as essential for enhancing capacity to address various issues—including disaster alleviation (Burnside-Lawry & Carvalho, 2016).

Similar to social cohesion, trust serves as a cornerstone of resilience by facilitating network formation and reducing the consequences of various crises. Communities with higher levels of cohesion and trust are more likely to engage in recovery initiatives that help them overcome obstacles through reduced transaction costs. Additionally, such societies can rapidly restore their pre-disaster status or achieve new equilibrium after a crisis

(Oh & Lee, 2022). As resilience capacities evolve over time through social innovations – defined as collaborative efforts utilizing multidisciplinary approaches to tackle complex urban challenges – communities can better address their needs (Horgan & Dimitrijević, 2018). This approach fosters collaboration among multiple stakeholders rather than relying on traditional disciplinary silos that lead to fragmented knowledge.
The perception of the social context by individuals plays a critical role in shaping community resilience – a vital factor for disaster risk reduction and adaptation strategies (Liu et al., 2022). Building community resilience hinges on fostering social capital while ensuring equity and prioritizing well-being along with public health considerations. Social capital – defined as the collective resources embedded within social networks – has emerged as an important indicator in frameworks assessing resilience (Liu et al., 2022).

DATA AND METHODS

We analyse data from an international survey organized within the Erasmus+ Cooperation Partnership UPRUN – "Urban Planning for Social Resilience in Urban Neighborhoods. Transformative Change through Civic Engagement" (project number 2023-1-DE01-KA220-HED-000167004). This survey was organized during summer 2024 (June to September) and collected 586 responses from nine countries in Europe, viewing Europe as a distinct cultural realm separate from other major cultural regions worldwide. This perspective encompasses traits such as European institutions, the influence of Christianity, Enlightenment philosophy, and an economic system characterized by commercial-industrial society (Ostergreen & Rice, 2004). Consequently, we analyse this data within an aggregated framework for our research.
The questionnaire was distributed among various stakeholders, including urban planners, architects, development projects managers, members of citizens' initiatives and local politicians. It was conducted anonymously, and in all instances, responses were analysed solely in aggregate form. Consequently, neither the answers nor the results of the data analysis allowed for the identification of the respondents' identities.
In general, the survey focused on perceptions regarding the economic situation, environmental conditions, and social relationships within communities. It examined the perceived roles of various stakeholders from different sectors, allowing us to compare formal and informal tasks among them. We recognize that individual perspectives on resilience within one community may not necessarily produce positive outcomes for other communities. This variability could be seen as a limitation of our study, as the unique characteristics and dynamics of each community can affect how resilience is perceived and implemented. However, we consider this limitation acceptable in the context of our research, especially when taking into account the principles of collective choice theory. As noted by Mueller (2003), collective choice processes often encompass diverse viewpoints that can result in varying outcomes across different contexts. Therefore, while our findings may not have universal applicability, they provide valuable insights into the intricate ways communities approach resilience and underscore the significance of understanding local dynamics in shaping collective action.
To examine how residents' activities and their perceptions of the economic, environmental, and social conditions in their communities influence local resilience, we use structural equation modeling in its partial least squares form (PLS-SEM). The model is built on data collected through the survey. PLS-SEM is well-suited for estimating relationships within complex constructs and identifying indirect effects, which fits the goals of our study. It is commonly used to explore theoretical constructs and causal pathways, including mediation and moderation effects (Hair, Hult, Ringle, & Sarstedt, 2014; Mehmetoglu & Venturini, 2021).

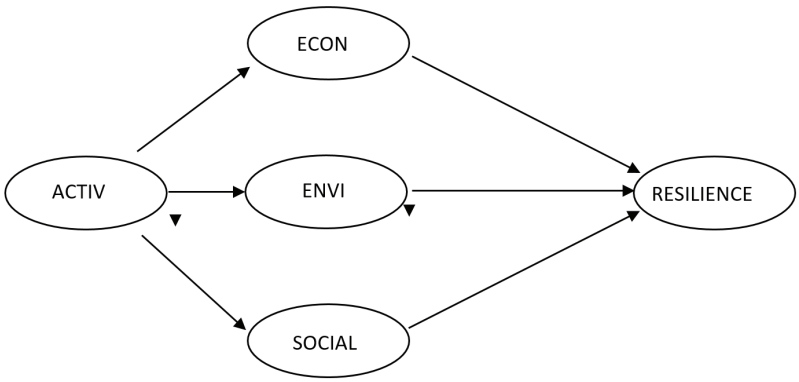

Figure 1: Tested model

In our analysis, we evaluate the model presented in Figure 1. First, we establish the latent variable ACTIV, which reflects the extent of active participation in planning processes, the capacity for engagement, and whether individual proposals are taken seriously within this framework see also variables in table 1). Next, we assess the impact of the latent variable ACTIV on the community's economic situation (ECON), characterized by economic diversity, stability, and household financial resources; environmental or spatial quality (ENVIR), defined by available green spaces and their perceived quality; and social factors (SOCIAL), which include social cohesion, frequency of community meetings, and feelings of safety. Finally, we define RESILIENCE as the perceived level of resilience within the community. The variable ACTIV exerts an indirect effect on RESILIENCE, whereas ECON, ENVIR, and SOCIAL have direct effects on it.

Our analysis utilized the plssem package in STATA 17 SE (Mehmetoglu and Venturini, 2021). This package standardizes variables for estimating latent constructs to ensure comparability. The estimation process unfolds in three steps. First, latent variable scores for each construct are estimated using bootstrapping with 2,500 iterations applied to each latent variable. Second, regression analysis is conducted to estimate relationships among the variables in the model. Lastly, we implement a moderation model that incorporates interaction terms related to economic, environmental, and social aspects while collaborating with municipal authorities, businesses, and civil society (as illustrated by the dotted arrows in Figure 1).

RESULTS

Our study reveals that individuals engage in the examined areas – economic, social and environmental. However, the findings indicate that two dimensions are particularly more important to them: the social and environmental aspects (see the estimations in table 1).

Variable	path coefficients Economic issues	Social issues	Environmental issues	Perceived resilience
ACTIVE	0.176 (0.000)	0.431 (0.000)	0.312 (0.000)	
Economic issues				0.119 (0.002)
Social issues				0.264 (0.000)
Environmental issues				0.328 (0.000)
Municipality participation				-0.093 (0.066)
Business participation				0.004 (0.957)
Civil society participation				0.041 (0.574)
Interaction term between economic issues and municipality participation				-0.043 (0.428)
Interaction term between social issues and municipality participation				-0.056 (0.273)
Interaction term between environmental issues and municipality participation				-0.047 (0.428)
Interaction term between economic issues and business participation				-0.073 (0.325)
Interaction term between social issues and business participation				0.037 (0.577)
Interaction term between environmental issues and business participation				0.025 (0.734)
Interaction term between economic issues and civil society participation				-0.019 (0.789)
Interaction term between social issues and civil society participation				0.062 (0.357)
Interaction term between environmental issues and civil society participation				-0.008 (0.912)
Interaction term between economic issues and participation of all sectors				0.057 (0.579)
Interaction term between social issues and participation of all sectors				0.002 (0.984)
Interaction term between environmental issues and participation of all sectors				0.065 (0.516)

Table 1: Structural model - Standardized path coefficients

Our results indicate a negative assessment of the municipality's role in fostering resilience. This suggests a disconnect between how municipalities (as representatives of the public sector) define resilience and how it is perceived by local communities. It is important to note that none of these estimates reached statistical significance. In contrast, when comparing the results for the business sector and civil society, we observe that all estimates related to municipalities are negative, while those for the business and nonprofit sectors exhibit more variability – some being positive and others negative; however, again none achieve statistical significance.

Perceptions of living conditions serve as a fundamental link between individuals and their built environment. These perceptions shape how people understand and engage with their surroundings, influencing behavior and decision-making processes that support collective resilience. This perspective plays a crucial role in designing urban forms that foster resilience. A place-based approach emphasizes the importance of images, narratives, and interpretations of urban space to uncover its values and meanings. It encourages integrating people with place by promoting shared understandings grounded in collective memory and cultural context (Shafiei Dastjerdi et al., 2021).

In this context, our findings indicate that perceived community resilience increases with both the quality of the surrounding environment and the strength of social connections. Specifically, perceptions of resilience are primarily shaped by environmental conditions alongside robust social networks. This outcome highlights self-organizing processes where citizens who feel a shared connection – through interests, place, lifestyle, culture, or practices (Celata, Dinnie, & Holsten, 2019) – mobilize resources to create the kind of community they desire. Such efforts often manifest as collective actions or initiatives aimed at addressing community needs – examples include co-creating public spaces or delivering shared goods and services within neighborhoods.

Climate change adaptation and green infrastructure are central themes in urban resilience research (Buzasi & Csizovszky, 2023). Our findings show that public spaces and green infrastructure significantly influence how people perceive resilience. Enhancing the quality of green spaces contributes not only to physical aspects of resilience – - such as improving thermal comfort (Sodoudi et al., 2018) – but also to subjective experiences associated with feeling resilient. This connection is particularly relevant given that green areas provide urban residents with restorative spaces during high-stress periods – a point underscored during the COVID-19 pandemic (Pamukcu-Albers et al., 2021; Ugolini et al., 2020).

Additionally, our results highlight the critical role of social capital in fostering resilience through strong social networks, cohesion, and trust. Robust community networks provide vital support during crises by increasing capacity for collective responses (Maclean et al., 2013). Trust enhances collaboration efforts while encouraging participation; it also increases the likelihood of proactive risk-reduction behaviors (Feinberg et al., 2020). Social cohesion – closely linked to volunteering and collective action – further reinforces resilience by promoting shared efforts toward common goals. Therefore, building social capital through strengthened networks fosters trust and cohesion; this strategy is essential for enhancing community-level resilience (Kirby, Stasiak, & von Schneidemesser, 2024).

Cooperation and co-production are fundamental components for achieving place-based resilience alongside effective governance strategies. These approaches promote collective action while strengthening local knowledge bases that support inclusive decision-making processes. Our findings suggest that cross-sector collaboration yields more favorable outcomes than engagement from individual sectors alone, although these estimated effects on resilience remain statistically insignificant. When communities collaborate with governments, businesses, and other stakeholders to pool diverse perspectives and expertise, they become better equipped to tackle complex challenges such as climate change adaptation and economic volatility.

Co-production fosters trust and shared responsibility while enabling adaptive strategies tailored specifically to local needs – a critical aspect of building sustainable long-term resilience within communities. This collaborative model not only reinforces social fabric but also enhances the equity and effectiveness of governance. Our findings further support the notion that resilience can be enhanced through co-production processes. In this context, co-production involves empowering citizens by actively involving them in the planning and design of their local environments – for instance, in creating and managing public green spaces. The primary objective is to expand citizens' knowledge, capacities, and access to resources. Importantly, this approach is not limited to affluent cities or neighborhoods; it can also be successfully implemented in disadvantaged or marginalized communities.

A compelling example is the '4Crescente' project in Lisbon's Marvila neighborhood, located in the eastern part of the city. While broader planning efforts focus on revitalizing the riverbank and redeveloping surrounding urban areas, initiatives in the core district have proceeded cautiously due to socio-economic constraints – such as a high proportion of households reliant on social transfers and limited private investment stemming from public housing (Falanga et al., 2019). In response, the public sector collaborated with researchers and non-governmental organizations to initiate social engagement activities – including community events and participatory .

workshops throughout the urban regeneration process. These initiatives encouraged residents to take an active role in shaping their neighborhoods while fostering a sense of ownership. Moreover, these collective efforts facilitated social learning, enabling community members and grassroots initiatives to assume strategic roles in addressing social needs and mitigating conflicts (Kirby et al., 2024; Othengrafen, Herrmann, & Lazarevski, 2024).
Our study challenges the conventional perspective that emphasizes a strong positive relationship between resilience and local public sector engagement. Typically, it is assumed that effective public sector involvement significantly contributes to maintaining environmental quality and fostering social relationships within communities. However, our findings suggest a more skeptical assessment of this relationship. One possible explanation for this skepticism is that individuals may overestimate the role of the public sector in ensuring favorable conditions. When they find themselves dissatisfied with their environment or social relations, they often attribute these shortcomings to local public sector failures. While the public sector can provide valuable political and financial support, it is crucial for local communities to actively engage in improving their own circumstances.

CONCLUSIONS

To understand community resilience is difficult. It is a complex issue and requires close attention to place-based and contextual factors. These factors are crucial to shaping how communities prepare for, respond to, and recover from both expected and unexpected disruptions. As our analysis illustrates, resilience is not a universal concept; it must be interpreted within the specific characteristics and conditions of each community. Efforts to enhance resilience are often tied to local assets and capacities, underscoring the deep connection between resilience and place-based approaches. The significance of these contextual elements cannot be overstated, as they fundamentally influence how resilience is expressed within communities. In this context, residents' perceptions play a particularly critical role in assessing and strengthening local resilience.
From our perspective on resilience, it is evident that local perceptions of what resilience should entail – often undefined – along with the experiences and beliefs of residents, are crucial factors. When local residents feel connected to their community, they can effectively engage in efforts to improve conditions and enhance resilience. Contrary to the notion that only property owners foster relationships, trust, and social cohesion (Liu et al., 2022), our findings suggest that tenants can also develop strong connections within their communities. For example, in areas where people live in rented accommodations, those who actively participate in community activities can build meaningful relationships and a sense of belonging. However, when such engagement is lacking, these communities may struggle to respond effectively to disruptions due to a diminished feeling of connection.
Environmental and social dimensions of resilience are especially important in this context. Acknowledging individuals' emotional attachments to their surroundings and involving them in shaping their environments can reinforce both a sense of belonging and overall community resilience. A resilient place, therefore, can be seen as the outcome of collaborative, co-designed efforts that aim to create vibrant, liveable, and secure neighbourhoods (Chand, 2018). Environmental features – particularly the presence and quality of green spaces – significantly influence community well-being. These spaces are valued not only for their ecological functions, such as supporting biodiversity and mitigating climate impacts, but also for their role in promoting social interaction, recreation, and mental health. By offering opportunities for connection with nature and serving as gathering places, green spaces help strengthen social bonds. Similarly, preserving built heritage contributes to a shared sense of identity and community pride, further enhancing cohesion and resilience. Communities that invest in the care and enhancement of green spaces and heritage assets foster environments where people feel a strong connection and mutual support—key elements of resilience in times of crisis and recovery.
Social dimensions – such as interpersonal relationships, community ties, and trust – are equally vital components of resilience. Robust social networks empower communities to share resources, disseminate information, and coordinate their responses during periods of stress. Trust among residents fosters a cooperative atmosphere where individuals are more inclined to collaborate, share responsibilities, and support each other in difficult times (Carmen et al., 2022; Fonseca, Lukosch, & Brazier, 2019; Liu et al., 2022). These social connections form the cornerstones of collective action, which is essential for withstanding and recovering from external shocks. Conversely, communities lacking social cohesion and trust are often less equipped to respond effectively, leaving them more vulnerable in times of crisis.
One of the most significant insights from our analysis is that community resilience can be strengthened across all types of neighborhoods, regardless of economic diversity or income levels. The capacity to build resilience does not depend solely on financial resources or economic status. Instead, it hinges on resident engagement and the development of supportive social and environmental conditions. In essence, community resilience is best understood through a place-based and contextual lens, emphasizing the perceptions and actions of those who live there. While economic factors play a role, it is the social and environmental aspects that are most influential

in shaping resilience. By nurturing social cohesion, building trust, and ensuring access to high-quality environmental spaces, communities can foster resilience regardless of their economic circumstances. Ultimately, the active involvement of residents is the foundation of truly resilient communities.

REFERENCES

Asadzadeh, A., Kötter, T., Salehi, P., & Birkmann, J. (2017). Operationalizing a concept: The systematic review of composite indicator building for measuring community disaster resilience. International Journal of Disaster Risk Reduction, 25, 147-162. doi:10.1016/j.ijdrr.2017.09.015

Burnside-Lawry, J., & Carvalho, L. (2016). A stakeholder approach to building community resilience: awareness to implementation. International Journal of Disaster Resilience in the Built Environment, 7(1), 4-25. doi:10.1108/ijdrbe-07-2013-0028

Buzasi, A., & Csizovszky, A. (2023). Urban sustainability and resilience: What the literature tells us about "lock-ins"? Ambio, 52(3), 616-630. doi:10.1007/s13280-022-01817-w

Carmen, E., Fazey, I., Ross, H., Bedinger, M., Smith, F. M., Prager, K., . . . Morrison, D. (2022). Building community resilience in a context of climate change: The role of social capital. Ambio, 51(6), 1371-1387. doi:10.1007/s13280-021-01678-9

Celata, F., Dinnie, L., & Holsten, A. (2019). Sustainability transitions to low-carbon societies: insights from European community-based initiatives. Regional Environmental Change, 19(4), 909-912. doi:10.1007/s10113-019-01488-6

Chand, A. V. M. (2018). Place based approach to plan for resilient cities: A local government perspective. Procedia Engineering, 212, 157–164.

Collinge, C., & Gibney, J. (2010). Place-making and the limitations of spatial leadership: reflections on the Øresund. Policy Studies, 31(4), 475-489. doi:10.1080/01442871003723432

Falanga, R., Nunes, M. C., & Chaves, H. (2019). Community engagement in urban regeneration: highlights from the 'Sê Bairrista' project in Marvila (Lisbon). In F. Othengrafen, S. Herrmann, D. Pencic, & S. Lazarevs (Eds.), Social cohesion and resilience through citizen engagement (pp. 231–253). Cheltenham: Edward Elgar Publishing.

Feinberg, A., Ghorbani, A., & Herder, P. M. (2020). Commoning toward urban resilience: The role of trust, social cohesion, and involvement in a simulated urban commons setting. Journal of Urban Affairs, 45(2), 142-167. doi:10.1080/07352166.2020.1851139

Fonseca, X., Lukosch, S., & Brazier, F. (2019). Social cohesion revisited: A new definition and how to characterize it. Innovation: The European Journal of Social Science Research, 32(2), 231-253. doi:10.1080/13511610.2018.1497480

Harangody, M., Vaughan, M., Richmond, L., et al. (2022). Hālana ka mana o: place-based connection as a source of long-term resilience. Ecology and Society 27(4).

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). A primer on partial least squares structural equation modeling (PLS-SEM). London: SAGE Publications.

Horgan, D., & Dimitrijević, B. (2018). Social innovation systems for building resilient communities. Urban Science, 2(1). doi:10.3390/urbansci2010013

Jones, L. (2018). Resilience isn't the same for all: Comparing subjective and objective approaches to resilience measurement. WIREs Climate Change 10(1).

Kirby, N., Stasiak, D., & von Schneidemesser, D. (2024). Community resilience through bottom–up participation: when civil society drives urban transformation processes. Community Development Journal. doi:10.1093/cdj/bsae031

Liu, Y., Cao, L., Yang, D., & Anderson, B. C. (2022). How social capital influences community resilience management development. Environmental Science & Policy, 136, 642-651. doi:10.1016/j.envsci.2022.07.028

Lwin, K. K., Pal, I., Shrestha, S., & Warnitchai, P. (2020). Assessing social resilience of flood-vulnerable communities in Ayeyarwady Delta, Myanmar. International Journal of Disaster Risk Reduction, 51. doi:10.1016/j.ijdrr.2020.101745

Maclean, K., Cuthill, M., & Ross, H. (2013). Six attributes of social resilience. Journal of Environmental Planning and Management, 57(1), 144-156. doi:10.1080/09640568.2013.763774

Maxwell, D., Constas, M., Frankenberger, T., Klaus, D., & Mock, M. (2015). Qualitative data and subjective indicators for resilience measurement. Retrieved from http://www.fsincop.net/fileadmin/user_upload/fsin/docs/resources/FSIN_TechnicalSeries_4.pdf

Meerow, S., Newell, J. P., & Stults, M. (2016). Defining urban resilience: A review. Landscape and Urban Planning, 147, 38-49. doi:10.1016/j.landurbplan.2015.11.011

Mehmetoglu, M., & Venturini, S. (2021). Structual equation modelling with partial least squares using STATA and R. Boca Raton: CRC Press.

Mehmood, A. (2016). Of resilient places: Planning for urban resilience. European Planning Studies, 24(2), 407-419. doi:10.1080/09654313.2015.1082980
Mueller, D. C. (2003). Public Choice III. Cambridge: Cambridge University Press.
Nguyen, H. L., & Akerkar, R. (2020). Modelling, measuring, and visualising community resilience: A systematic review. Sustainability, 12(19). doi:10.3390/su12197896
Oh, J., & Lee, D. (2022). Role of trust in government and collaboration in building disaster resilience. Social Science Quarterly, 103(7), 1647-1658. doi:10.1111/ssqu.13229
Ostergreen, R. C. & Rice, J.G. (2004). The Europeans. A geography of people, culture, and environment. New York: The Guilford Press.
Othengrafen, F., Herrmann, S., & Lazarevski, S. (2024). Civic engagement and community-based initiatives as driving force for social resilience: some comparative conclusions;. In F. H. Othengrafen, S.; Pencic, D.; Lazarevski, S. (Ed.), Social cohesion and resilience through citizen engagement A place-based approach (pp. 262-282). Cheltenham: Edward Elgar Publishing.
Pamukcu-Albers, P., Ugolini, F., La Rosa, D., Gradinaru, S. R., Azevedo, J. C., & Wu, J. (2021). Building green infrastructure to enhance urban resilience to climate change and pandemics. Landsc Ecol, 36(3), 665-673. doi:10.1007/s10980-021-01212-y
Saja, A. M. A., Teo, M., Goonetilleke, A., & Ziyath, A. M. (2021). A critical review of social resilience properties and pathways in disaster management. International Journal of Disaster Risk Science, 12(6), 790-804. doi:10.1007/s13753-021-00378-y
Shafiei Dastjerdi, M., Lak, A., Ghaffari, A., & Sharifi, A. (2021). A conceptual framework for resilient place assessment based on spatial resilience approach: An integrative review. Urban Climate, 36. doi:10.1016/j.uclim.2021.100794
Sharifi, A. (2016). A critical review of selected tools for assessing community resilience. Ecological Indicators, 69, 629-647. doi:10.1016/j.ecolind.2016.05.023
Sodoudi, S., Zhang, H., Chi, X., Müller, F., & Li, H. (2018). The influence of spatial configuration of green areas on microclimate and thermal comfort. Urban Forestry & Urban Greening, 34, 85-96. doi:10.1016/j.ufug.2018.06.002
Song, J., Pandey, R., Dong, G., Sharifi, A., & Subedi, B. P. (2022). Urban-rural disparity in community resilience: A multilevel analysis of the relief progress after the 2015 Nepal earthquake. Sustainable Cities and Society, 79. doi:10.1016/j.scs.2022.103698
Ugolini, F., Massetti, L., Calaza-Martinez, P., Carinanos, P., Dobbs, C., Ostoic, S. K., . . . Sanesi, G. (2020). Effects of the COVID-19 pandemic on the use and perceptions of urban green space: An international exploratory study. Urban For Urban Green, 56, 126888. doi:10.1016/j.ufug.2020.126888
Vale, L. J. (2014). The politics of resilient cities: whose resilience and whose city? Building Research & Information, 42(2), 191-201. doi:10.1080/09613218.2014.850602
Yazar, M., York, A., & Larson, K. L. (2022). Adaptation, exposure, and politics: Local extreme heat and global climate change risk perceptions in the phoenix metropolitan region, USA. Cities, 127. doi:10.1016/j.cities.2022.103763