# Social Injustice Inflicted by Spatial Changes in Vernacular Settings: An Analysis of Published Literature

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## Abstract

It is well known that every kind of development has the tendancy to produce spatial disparity or spatial justice. However, usually, it is the demand-driven, rural, non-agricultural transitional area development considered the prime cause of concern for policy planners. Indeed, this is an area where spatial justice needs to be ensured so that development is just for all and not lopsided for any single stakeholder. For example, there is a need to ensure that fair allocation of land development rights rests with the village dwellers. Usually, the market is biased in favour of allocating premium land of the vernacular settlements to expand the city for new city dwellers who wish to get new parcels of land for developing housing. Plan-led spatial changes without corrective mediation between villagers and the city dwellers also lead to bias decision-making. Transition from rural sprawl to urban compactness suggests institutional change need be adopted in governance so that socio-spatial justice for villagers is incorporated into an integrated city.

In this context, this paper examines the current knolwdge reflected through academic narratives of social injustice inflicted by spatial change. This paper presents the concept of spatial justice as an umbrella term encompassing all political, social, economic, and environmental forms. Gentrification and peri-urbanization are two spatial changes that do injustice to certain social groups.

The paper employs both quantitative and qualitative data gathering techniques. It conducts primarily a document survey, analysing published research related to development and social and spatial justics issues. The documents discussing the role of planning in achieving spatial justice until 2023 are examined.

The paper reveals that while formal planning often marginalizes vernacular settlements, participatory and community-driven planning processes show potential for addressing issues of spatial injustice. The paper concludes that the investigation into spatial justice within vernacular settlements must account for unique socio-cultural, environmental, and economic dynamics.

**Keywords:** Spatial Planning, Peri-urban Areas, Spatial Injustice, Urban Growth, Spatial Justice

## Introduction

Projections suggest that India is poised to reach a staggering 800 million urban dwellers by the year 2050, underscoring the gravity of challenges posed by escalating urbanization (United Nations, 2019). These challenges include the imperative for sustainable infrastructure and environmental management. The escalating demand for urban accommodations and services is particularly concerning, which places significant pressure on infrastructure, financial resources, and governance structures, as emphasized in this research (Saraswat et al., 2024). The study of urban planning from the lens of justice gives us insights into the injustices inflicted by spatial planning and market driven development processes. The increasing income inequality between the rich and the poor makes the issue of social equality a cause of concern. Besides income inequalities, social segregation and marginalization of the poor causes spatial injustice in human settlements. Inter- and intra-urban spatial disparity and injustice is closely associated with the phenomena of urbanization (Weck et al., 2022).

Let us understand this from a scenario where the expanding limits of the urban areas now consume a village. The old dilapidated kacha houses of the farmers will now be termed as slum areas in the context of the urban areas which have better infrastructure and facilities. Earlier, village was not a derogatory term but a manifestation of ruralness. However, slum as an urban informal settlement is a derogatory term for the residents. Thus, social injustice is caused simply through spatial planning measures by delineating municipal boundaries and identifying areas as being urban. In fact, this autonomous village panchayat is now a part of the larger municipality and the village head is now the ward councillor of the ward which is created by merging one or more adjoining villages. Once agricultural work is done, the villages will be forced to be converted into unskilled daily wage labourers. Thus a self-sufficient economic system will get converted to a dependent and subsidiary economy of the urban system. This is unarguably, a kind of economic disparity created by spatial planning.

According to Yang et al. (2020), these economic inequalities can be considered as the by-product of spatial agglomeration for production efficiency in urban areas. Adding to this, Wirth (1938) points out that it is the social forces that cause spatial clustering of people in these areas. Indeed, Many reserachers such as Whyte (1988) have shown that urban-rural inequality has been visible over a long period in India. However, as Chan (2014) points out, in the economically dynamic regions. According to Guo et al. (2018), where the urban growth is managed properly, urban-rural divide is negligible whereas rural non-agricultural development takes place during the socio-spatial transition the spatial injustice is more visible and persistent. Nevertheless, it is observed that equality and justice are two strong pillars of traditional governance in villages of rural India and most of the villages are self-governing social units (Swidler, 2000). Such villages face great challenges in transitioning towards non-farming economies suitable for the urban areas.

In this regard, Madanipour et al. (2022) point sout that the localized small-sized land development driven mostly by real estate developers is defined as uncoordinated growth based on available land uses. Such time of development takes place at a slower pace while the coordinated development driven by planning authorities causes a great deal of social injustice and most often leads to gentrification of the areas further aggravating the situation. This lopsided development approach often leads to the distribution of benefits, which usually leads to social tensions and conflicts. To reduce the spatial disparity, planners need to focus on inclusive urbanization that can help in enhancing economic productivity and ensure the sharing of the benefits derived from urbanization among all the people (World Bank & Commission on Growth and Development, 2008).

It is now well understood that compact cities are a necessity rather than a choice for the developing countries like India with high population density now residing in urban areas. When cities are not planned for high desity urban growth, transit-oriented developments are hardly promoted (Sharma et al., 2024) and the peri urban areas are bound to be affected by urban sprawl and spatial injustice.

Although not yet recognized, the concept of compact city is a feasible option to channel the urban growth to promote high-density urban physical expansion and conservation of the vernacular settlements. Mohammed et al. (2016) point out that they enhance environmental integrity, and integrate the blue and green infrastructure in such a manner promoting biodiversity. Indeed, they enhance the ecological benefits of the peri-urban areas. However, the transition from rural sprawl to urban compactness requires restructuring the socio-spatial planning processes using the top-down coordination approach with different stakeholders and government agencies to achieve desired spatial justice for the residents.

In this context, the research examines spatial injustice emerging from urban development and expansion into peri-urban areas. It asks the questions as to how spatial justice manifest in the vernacular settlements, and what socio-spatial dynamics influence equitable access to resources, infrastructure, and services within these communities.

Its aim to investigate the concept of spatial justice in the context of vernacular settlements, examining how spatial organization, access to resources, and infrastructural development impact the social and economic well-being of the inhabitants. Its objectives are:

- To analyze the socio-cultural factors that shape the organization and evolution of vernacular settlements and their relationship with spatial justice.
- To investigate the role of local governance and community participation in shaping the spatial equity of vernacular settlements.
- To compare spatial justice indicators in vernacular settlements with formal urban settlements to understand the broader implications of urban planning policies on marginalized communities.
- To propose policy recommendations and spatial interventions to promote more equitable and just spatial arrangements in vernacular settlements.

## Theoretical Framework

The theoretical framework for this research on spatial justice in vernacular settlements draws upon key concepts from spatial justice theory, social constructivism, and the right to the city. These theoretical perspectives provide a lens through which to analyze how spatial inequalities manifest within the vernacular settlements and how the socio-cultural and governance dynamics influence spatial justice.

### Spatial Justice Theory

Spatial justice theory, as conceptualized by Edward Soja and Henri Lefebvre, provides the foundation for understanding how space is socially produced and how spatial inequalities are linked to broader social, economic, and political processes. According to this theory, spatial justice focuses on the equitable distribution of resources, opportunities, and services across space, ensuring that all the members of a community have fair access to the benefits of the built environment (Soja, 2010). In the context of vernacular settlements, this theory will guide the investigation into how the spatial organization of these communities either promotes or hinders equity in access to infrastructure, services, and resources (Speer, 2015). This lens helps to explore whether spatial arrangements within these informal settlements reinforce social inequalities or provide avenues for resilience and community-driven equity.

**Social Constructivism**

Social constructivism, which emphasizes that knowledge and meaning are constructed through social interaction, serves as an important theoretical tool for understanding how socio-cultural factors shape the spatial organization of the vernacular settlements (Detel, 2001). This approach views space not as a neutral or fixed entity but as a product of human agency, social norms, and cultural practices. In vernacular settlements, spatial arrangements are often reflective of cultural values, traditional practices, and community-based decision-making processes. By applying social constructivism, the research will explore how the unique spatial layouts and infrastructure development of vernacular settlements are influenced by the social and cultural fabric of the community and how these patterns affect spatial justice.

**Right to the City**

Henri Lefebvre's concept of the 'Right to the City' underpins the idea that all citizens, regardless of social or economic status, should have equal access to urban spaces and the benefits they provide (Purcell, 2014). This theory critiques the exclusionary nature of urban planning and development, particularly how marginalized groups are often left out of decision-making processes and spatial development. Applying this concept to vernacular settlements, the research examines how communities assert their right to shape their living environments and participate in urban development. It also explores the extent to which residents of these settlements are included or excluded from formal urban planning processes and whether they can claim their rightful access to resources and opportunities within the city.

**Social Capital Theory**

Articulated by scholars like Pierre Bourdieu and Robert Putnam, this theory focuses on the value of social networks, trust, and cooperation in achieving collective goals. In the context of vernacular settlements, social capital plays a significant role in shaping spatial organization, resource distribution, and community resilience (Eloire, 2018). Residents often rely on strong social networks and communal efforts to address spatial inequities, such as building infrastructure or pooling resources for shared services (Gelderblom, 2018). This theory will investigate how community participation and local governance structures influence spatial equity in these settlements, and how social capital can enhance or limit access to essential resources and opportunities.

The research will thus explore the relationship between space, power, and social justice in vernacular settlements by integrating these three theoretical frameworks. Spatial Justice Theory will provide the foundation for identifying and analyzing spatial inequalities, while the Right to the City concept will frame the discussion around access to resources and participation in urban development. Social Capital Theory will serve to understand the role of community cohesion and participation in shaping more equitable spatial arrangements.

## Research Methodology

This paper employs document survey as the primary method for investigating existing knowledge on spatial justice in the context of vernacular settlements. This method allows for the systematic collection and analysis of existing information, which is particularly useful for understanding historical, theoretical, and policy perspectives on spatial justiceas they stand today.

This systematic examination of literature provides an overview of the current state of knolwdge on spatial injustice and identifies future directions for research (Dehalwar & Sharma, 2023). The investigation covers studies published till 2023, focusing on spatial injustice in peri urban areas. The study uses a comprehensive search strategy to identify relevant studies, including peer-reviewed articles, conference proceedings, and technical reports. A total of 42 studies were selected for inclusion in the review, and their findings are synthesized using a thematic analysis approach. For this document survey conducted in april 2023, scopus and google scholar database searches were. employed Keyword search employed the two terms 'spatial justice in vernacular settlments' and 'spatial justice in peri urban areas.'

Based on the filtering criteria applied to the search term "spatial justice in peri urban areas", the following inferences can be made.

The search term generated a large number of results, totalling 868. The search was filtered to include only research papers, in order to focus on academic literature and exclude news articles or other forms of media. The time period was limited to be between 2013 to 2023 and yielded 692 records. This indicates that there is a notable research focus on this issue. When filtered for open access journals, it yielded only 135, indicating that access to this knowledge however is limited.

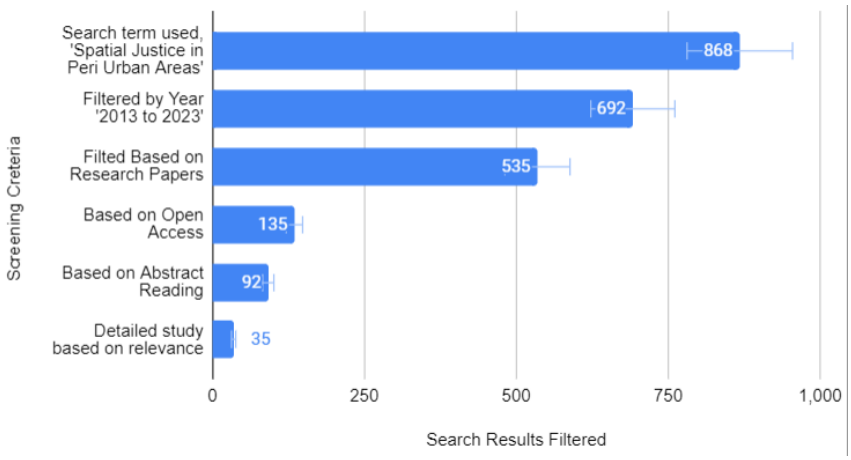


**Fig 1**: Search Results of the Systematic Document Survey
Source: Author

## Findings

Findings are manifold. However, the first noteworthy finding is that there is a notable increase in the research that have been conducted into this issue beginning from about 2015. Prior to that, only a small number of research have examined this issue. However, by 2023 a little less than 125 research papers per year have looked the issues of spatial justice related to vernacular settings.

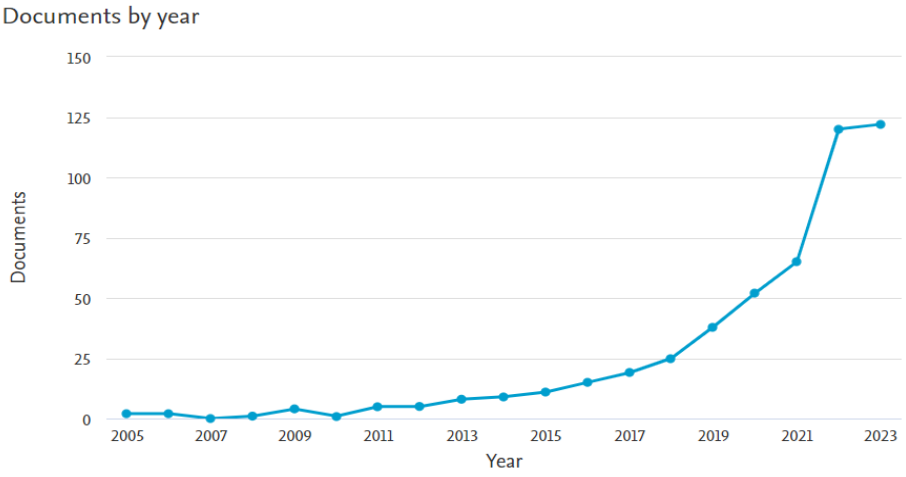


**Fig. 2**: Trend of Research Related to Spatial Injustice in Vernacular Settings.
Source: Author

The document of 2023 examined explores emerging trends in spatial justice, emphasizing the role of sustainable urbanization and climate resilience in addressing inequities. It focuses on the relationship between environmental degradation and marginalized

communities, highlighting how spatial justice must incorporate climate adaptation strategies to protect vulnerable populations . It also introduces smart city frameworks to ensure equitable access to digital resources, infrastructure, and public spaces.

The document from 2022 examined delves into urban displacement and the effects of gentrification on low-income neighborhoods. It presents case studies on how urban renewal projects have displaced indigenous and vernacular communities, exacerbating spatial inequalities. It further advocates for inclusive zoning laws and community land trusts as tools for promoting spatial justice. The document also discusses how social housing projects can help bridge the gap between marginalized and affluent communities (Weck et al., 2022), (Madanipour et al., 2022; Taylor et al., 2022; Zhu & Guo, 2022).

The 2021 publication examined focuses on land use and housing policies in relation to spatial justice. It examines how zoning practices and land use regulations impact different socio-economic groups. This document provides a comparative analysis of various cities where affordable housing initiatives have either succeeded or failed to address spatial injustices. It also covers the role of public transportation in connecting disadvantaged communities to employment hubs, promoting economic justice (Aburamadan et al., 2021; Chen et al., 2021; Lee et al., 2021).

In 2020, the document focused on spatial segregation and its historical roots. It traces how many countries' colonial and post-colonial planning policies created spatial inequalities along racial, ethnic, and class lines. The document emphasizes the importance of decolonizing urban planning to promote spatial justice, calling for reparative policies that aim to redistribute resources more equitably and dismantle longstanding institutional barriers to spatial equality .

The 2019 document provides insights into participatory planning as a tool for spatial justice. It stresses the importance of community involvement in urban development projects, noting that top-down approaches often fail to meet the needs of marginalized groups. This document proposes frameworks for participatory governance, emphasizing how grassroots movements can play a crucial role in achieving spatial justice. It also addresses the intersection of gender and space, discussing how women and other marginalized groups are disproportionately affected by spatial injustices (Agarwal et al., 2019; Aijaz, 2019; Anguelovski et al., 2019).

The 2018 document looks at infrastructure development and how it contributes to spatial inequalities. Focusing on rural and semi-urban areas, it examines how unequal access to infrastructure like roads, water, and electricity perpetuates spatial injustice. The document highlights the role of public-private partnerships in addressing these disparities and suggests policy measures to ensure that infrastructure investments are distributed more equitably across regions (Almohamad et al., 2018; Eloire, 2018; Gelderblom, 2018; Guo et al., 2018).

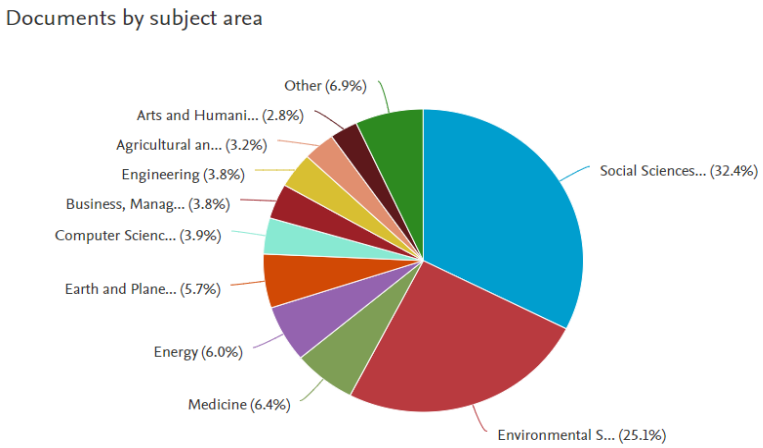


**Fig. 3**. Distribution of Subject-Oriented Research Related to Spatial Injustice in Vernacular Settings. Source: Author

Spatial injustice research spans a wide range of disciplines, each contributing unique insights into how inequalities are embedded in space and geography. The Social Sciences, with the largest body of research (311 documents), focus heavily on themes like urban segregation, displacement, housing inequality, and inequitable access to public services. These studies often critique how marginalized communities are systematically excluded from essential resources and services and offer policy recommendations for more equitable urban planning. In Environmental Science (241 documents), research is centered around environmental justice, examining how marginalized groups bear the brunt of environmental degradation and are more vulnerable to climate change impacts, such as floods and pollution. The intersection of spatial injustice and energy (58 documents) highlights energy access inequality and the challenges of energy poverty, particularly in rural and low-income urban areas. Studies here also address how the transition to renewable energy could either mitigate or exacerbate existing inequalities.

In Earth and Planetary Sciences (55 documents), spatial injustice is explored through the lens of natural disaster vulnerability and resource extraction, with a focus on how marginalized communities often live in high-risk areas or are displaced by extractive industries. Computer Science (37 documents) contributes by exploring the role of digital infrastructure and technology in either reinforcing or mitigating spatial inequalities, particularly through the use of GIS, spatial data analysis, and smart city technologies. Business, Management, and Accounting (36 documents) and Engineering (36 documents) offer perspectives on how infrastructure development, corporate responsibility, and urban design contribute to spatial disparities. Finally, Agricultural and Biological Sciences (31 documents) focus on the impact of unequal land distribution, food insecurity, and the marginalization of rural communities, often emphasizing the role of sustainable development and agricultural practices in addressing spatial inequalities. These fields highlight complexity and multi-faceted nature of spatial injustice, demonstrating how it intersects with social, environmental, economic, and technological factors.

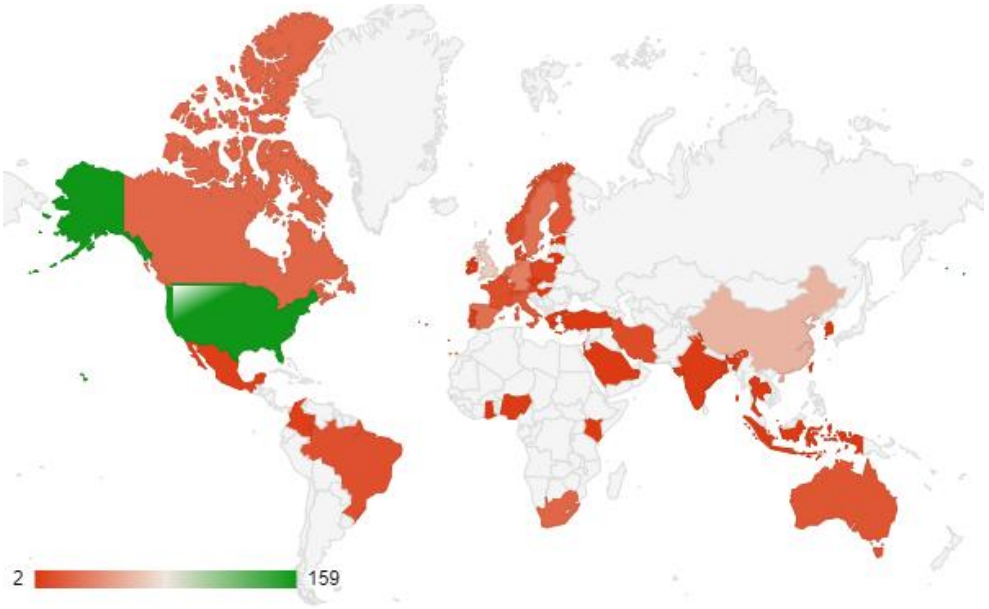


**Fig. 4:** Geographic Distribution of Research Related to Spatial Injustice in Vernacular Settings. Source: Author

The geographic distribution of publications on spatial injustice reflects the concentration of research efforts across different countries and regions, with certain countries emerging as leaders in this field. The United States tops the list with 159 documents, indicating a strong focus on spatial injustice, particularly about urban segregation, environmental justice, and social inequality. The United Kingdom follows with 70 publications, reflecting significant

interest in gentrification, housing policies, and equitable urban planning issues. China is also prominent with 58 documents, likely driven by rapid urbanization and the associated spatial disparities between urban and rural areas.

Germany (34 documents), the Netherlands (29), and Spain (27) contribute substantially to the body of research, often focusing on sustainable urban development, infrastructure inequities, and participatory governance. Sweden (27 documents) and Canada (23) also show notable interest, particularly in the context of environmental justice and indigenous rights. In the Global South, South Africa (23 documents) stands out due to its unique history of apartheid and spatial segregation, while Brazil (13) and India (4) represent growing research areas in the context of informal settlements and rural-urban inequalities.

Northern European countries such as Finland (17), Norway (12), and Denmark (10) also contribute a significant number of documents, often focusing on regional spatial planning and sustainable development. Australia (15) and Italy (17) contribute through research on urban infrastructure and environmental degradation.

Smaller but notable contributions come from Belgium, France, Iran, Mexico, and Nigeria, with each country producing between 4 and 12 documents. These studies often explore localized spatial injustices such as resource access, land use, and the impact of industrial activities on marginalized communities. Eastern European and East Asian countries, such as Poland, Hungary, South Korea, and Taiwan, also contribute to the conversation, albeit at a smaller scale.

The geographic distribution shows that spatial injustice is a global issue, with research concentrated in developed nations but increasingly being explored in emerging economies. This distribution reflects both the localized nature of spatial injustice and the global interest in addressing inequalities in urban and rural spaces.

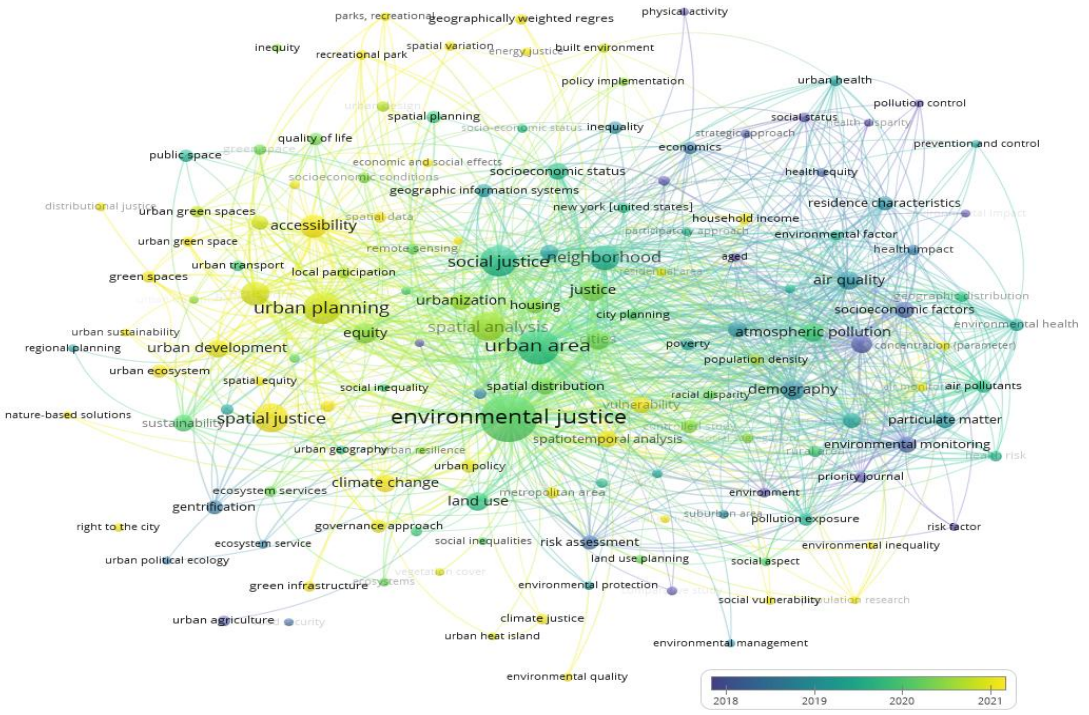


**Fig. 5**: Keyword Density Analysis of Research Related to Spatial Injustice in Vernacular Settings
Source: Author

## Themes Emerging

### Unequal Distribution of Resources

Vernacular settings often experience disparities in access to essential resources like water, electricity, and sanitation. These inequalities emerge due to a lack of formal planning and investment in marginalized or rural areas. The investigation revealed that wealthier or more influential communities tend to receive a disproportionate share of these resources, leaving disadvantaged groups with limited access (Chen et al., 2021; Feng & Gao, 2023; Jiang et al., 2022).

### Land Ownership and Tenure Insecurity

Land ownership plays a critical role in spatial justice. In vernacular settings, land tenure is frequently informal, leading to insecure housing for many residents. This insecurity can lead to forced evictions or displacement, which reinforces social inequality. The study showed that communities without formal ownership rights are more vulnerable to land grabs by external developers or governments (Chisadza, 2020; Oladehinde et al., 2024; Uwayezu & de Vries, 2018).

### Exclusion from Urban Services

Vernacular settings, especially those on the peripheries of cities, often face exclusion from essential urban services like healthcare, education, and public transport. The investigation found that this exclusion leads to a cycle of poverty, limiting economic mobility and reinforcing social divisions (Cordera et al., 2019; Ernstson, 2013; Nyelele & Kroll, 2020). Additionally, when these services are available, their quality is often substandard compared to formal urban areas.

### Cultural Marginalization

Many vernacular settings are built around distinct cultural practices and traditional knowledge systems. However, modern urban planning models often overlook these cultural dimensions, erasing indigenous knowledge and practices (Avi Marlina et al., 2024). The investigation identified that this cultural marginalization deepens the spatial injustices experienced by these communities, as their ways of life are either ignored or actively suppressed.

### Environmental Vulnerabilities

Vernacular settings are often situated in areas prone to environmental risks, such as pollution, floods, landslides, or droughts, it is oftwn seen that the dumping ground and waste disposal is being done in vicinity of the vernacular settlments in peri urban areas (Kumar et al., 2024; Sharma, Dehalwar, et al., 2024). The investigation found that these locations are chosen due to economic constraints or historical marginalization. Without proper infrastructure and support, residents face heightened vulnerability to natural disasters, exacerbating social and economic inequality (Bogardi, 2004; See & Wilmsen, 2020).

### Resistance and Resilience

Despite these challenges, vernacular settings often exhibit high social cohesion and resilience levels. The investigation highlighted that many communities employ collective action and grassroots initiatives to address spatial injustices. This includes informal systems of resource sharing, community-led infrastructure projects, and advocacy for legal recognition of their settlements (De Carli, 2016; Song et al., 2024; Wang et al., 2023).

### Gender Inequities

Spatial justice in vernacular settings is also shaped by gender. The investigation found that women, particularly in rural and indigenous settings, face specific forms of spatial injustice, including restricted access to public spaces, safety concerns, and exclusion from decision-making processes related to land and housing (Begum et al., 2021; Coen et al., 2020; Dehalwar & Sharma, 2024).

### Inclusive Planning Approaches

One of the key findings was the need for more inclusive urban planning approaches that integrate vernacular knowledge, recognize informal land tenure, and ensure equitable access to resources and services. Participatory planning models have been identified as crucial for promoting spatial justice, allowing marginalized communities to have a say in the development of their settlements (Adem Esmail et al., 2022; Brain, 2019; Yi & Son, 2022).

Existing policy frameworks often fail to address the unique challenges vernacular settings face. The investigation found a gap between recognizing these settlements in planning documents and implementing policies that promote spatial justice. Legal mechanisms for land ownership, infrastructure provision, and cultural preservation remain weak, further entrenching inequalities. Informal economies often sustain vernacular settings, where labor practices are unregulated and workers face exploitation. The investigation revealed that spatial injustices are perpetuated by the lack of access to formal employment opportunities and social protections, making residents vulnerable to economic shocks.

The investigation into spatial justice in vernacular settings reveals a complex interplay of social, economic, and cultural factors that perpetuate inequalities. Addressing these challenges requires a multifaceted approach that incorporates inclusive policies, participatory planning, and recognition the unique identities and needs of these communities.

## Analysis and Discussion

The study of spatial justice in the peri-urban areas of cities in India is a phenomenon, which needs greater attention of researchers and policy makers so that such spatial disparity can be removed in the planning and development process that keeps on engulfing more and more of the peri-urban areas. The analysis of the principal components of spatial justice will give an in-depth insight into the dynamics of spatial justice.

### Attributes of Spatial Justice

Spatial justice refers to the fair distribution of resources, opportunities, and benefits within a given physical space or territory. Spatial justice requires all individuals and communities to have equitable access to basic resources such as water, food, housing, and transportation (Boquet, 2017). Spatial justice ensures that the distribution of resources and opportunities is not biased towards certain individuals or groups based on race, gender, socioeconomic status, or other factors (Weck et al., 2022). Spatial justice recognizes and values the diversity of cultures, identities, and experiences within a given space or territory (Madanipour et al., 2022). Spatial justice aims to promote sustainable development practices that protect and preserve natural resources for future generations (Ng & Wong, 2022). Spatial justice promotes the active participation and involvement of all individuals and communities in decision-making processes that affect their lives and well-being (Banerjee & Schuitema, 2023). Spatial justice requires that all individuals feel safe and secure within their physical environment, free from threats of violence, discrimination, or marginalization (Adegeye & Coetzee, 2019). Spatial justice aims to build resilience in communities to withstand and recover from shocks and stresses such as natural disasters, economic downturns, and social upheavals (Carmen et al., 2022).

The table 2 given below is a summarized version of the principal component analysis done using the Delphi method.

**Table 2:** Attributes of Spatial Justice
Source: Author

| Code | Principal Components | Sub-components | References |
|---|---|---|---|
| S | **Social Vulnerability Attributes** | S1: Age | (Song et al., 2024) |
| | | S2: Sex | (Jones & Moisio, 2024) |
| | | S3: Literacy | (Wen et al., 2024) |
| | | S4: Caste | (Bailwal & Paul, 2024) |
| | | S5: Religion | (Chen et al., 2021) |
| N | **Environmental Vulnerability Attributes** | N1: Hospitals | (Kim, 2021) |
| | | N2: Green Areas | (Badaloni et al., 2023) |
| | | N3: Waste Disposal | (Bhowmick et al., 2024) |
| | | N4: Safety | (Wang et al., 2023) |
| | | N5: Disaster/Risk | (Han et al., 2024) |
| P | **Political vulnerability attributes** | P1: Leadership | (Lo et al., 2024) |
| | | P2: Elected Representatives | (Kundo et al., 2023) |
| | | P3: Political Power | (Kundo et al., 2023) |
| | | P4: Access to Information | (See & Wilmsen, 2020) |
| | | P5: Access to Law and Order | (Feng & Gao, 2023) |
| E | **Economic Vulnerability Attributes** | E1: Land Tenure | (Oladehinde et al., 2024) |
| | | E2: Property | (Chen et al., 2021) |
| | | E3: Production | (Zhang & Zhao, 2024) |
| | | E4: Work Opportunities | (Suleimany, 2023) |
| | | E5: Financial Support | (Zhang & Zhao, 2024) |

### Social Vulnerabilities

For centuries, the rural society of India has been perceived as a symbol of equality, where the affluent class in villages traditionally served as leaders and benefactors, preserving the autonomy and integrity of these communities. However, the current social fabric is unraveling due to multiple factors. Land productivity is declining, and as land plots continue to be subdivided across generations, they become too small for mechanized farming (Baldwin, 2018). This fragmentation of agricultural land has led to a failure in providing sufficient employment for the village youth, exacerbating poverty and deepening the economic divide between wealthy and poor villages (Joyner et al., 2022). Moreover, caste-based rivalries are eroding the traditional social cohesion that once bound these communities together. Lack of progressive agricultural practices and the non-implementation of land reforms since India's independence have further intensified social injustices in these rural areas, leaving them vulnerable to systemic inequality.

### Economic Vulnerabilities

The rapid urbanization and economic transformation in India, especially since the 1990s, have drastically altered the economic landscape of the peri-urban areas. Villages near

metropolitan regions like Delhi, Mumbai, Chennai, and Bangalore have experienced significant development, leading to a shift in employment from agriculture to industrial and service sectors. While some villagers have benefited by becoming landlords or capitalizing on rising land values, this economic transition has also widened the gap between different villages. The uneven distribution of land development and access to resources has led to economic vulnerabilities, where villages closer to urban centers or highways reap the benefits of urbanization, while others remain neglected (Jones & Moisio, 2024). This disparity contributes to spatial injustice, as the economic opportunities created by urbanization are not evenly distributed, leaving many rural communities economically disadvantaged (Adegeye & Coetzee, 2019).

**Environmental Vulnerabilities**

Environmental vulnerabilities in peri-urban areas have been exacerbated by the process of gentrification, where the influx of wealthier residents leads to the displacement of lower-income communities. The expansion of urban boundaries often degrades the environmental services of these regions, as municipal corporations prioritize urban development over environmental preservation (Kumar et al., 2024). This gentrification process results in rising housing prices, economic instability, and cultural displacement, further marginalizing the original residents (Anguelovski et al., 2018). The environmental integrity of these areas is compromised as agricultural lands are converted into non-agricultural uses without adequate planning, leading to fragmented landscapes that are neither conducive to farming nor to maintaining a healthy living environment (Badaloni et al., 2023). The degradation of environmental resources and the uneven impact of urbanization contribute to environmental injustice, disproportionately affecting those with fewer means to adapt or relocate.

**Political Vulnerabilities**

Political vulnerabilities in vernacular settlements arise from the lack of inclusive and equitable planning processes. Government regulations and land development policies often favor urban centers and economically dynamic regions, leaving rural and peri-urban areas underrepresented in decision-making processes. The transfer of development rights (TDR) and other urban planning tools are typically not extended to rural areas, further marginalizing these communities (Hou et al., 2018). The lack of interdepartmental coordination and biased planning practices intensify rural inequalities, as some villages benefit from development while others are left behind. The political marginalization of these communities contributes to spatial injustice, as their needs and voices are often overlooked in favor of urban-centric development agendas (Dehalwar & Sharma, 2024).

**Summing Up**

Spatial injustice in vernacular settings is a multifaceted issue rooted in social, economic, environmental, and political vulnerabilities. The erosion of traditional social structures, economic disparities due to uneven development, environmental degradation caused by gentrification, and political marginalization all contribute to an inequitable distribution of resources and opportunities. Rural and peri-urban areas, particularly those not strategically located or politically connected, face systemic disadvantages that perpetuate cycles of poverty and exclusion. Addressing these vulnerabilities requires a more inclusive and coordinated approach to planning and development, ensuring that all communities have equitable access to the benefits of progress and are protected from the adverse effects of urbanization.

The concept of vulnerability is studied from social and economic purviews, policy, and planning perspectives (Pearsall, 2010). Vulnerability is a situation of getting negatively affected by exposure to socio-economic and environmental factors (Pearsall et al., 2008). From the empirical evidence, the authors have tried to capture more attention to ‘spatial’ vulnerability and selected several key variables, such as social, economic, political, and environmental vulnerabilities, that describe interactive effects of justice or equity in general and spatial justice

in particular. The spatial justice concept and variables related to vulnerabilities can be linked with spatial justice as a form of political, socioeconomic and environmental changes in the peri-urban areas of the cities (Purwohandoyo et al., 2023).

Such vulnerabilities in the context of peri-urban areas are more evident in the metropolitan cities like Delhi, Mumbai, Bangalore, Chennai, Kolkata etc. In this connection Haase et al. (2017) address the role of green space as environmental factors and urban development as economic factors in deciding the spatial justice. While neighbourhoods with environmental amenities are more likely to obtain economic, ecological and social benefits, they also tend to attract more affluent class, leading to price rise in housing. As a result, urban development in peri-urban areas give rise to the displacement of vulnerable populations (e.g., low income residents, minority residents) from the peri-urban areas or sometimes their residential areas are termed as slums and squatters due to poor social and physical infrastructure or deterioration of housing over a long period of transition from rural to urban.

In the context of social justice, the historical context shapes the intricate dynamics between individuals and their environment, emphasizing the significance of the relationship between humans and the spaces they inhabit over time. This relationship, viewed through the lens of landscape, encompasses various elements such as emotions, perceptions, reflections, and understandings. By adopting a landscape approach, these components have the potential to cultivate crucial factors conducive to social justice, including a profound sense of belonging and the preservation of personal and collective memories. Moreover, this approach fosters a heightened sense of participation, enabling individuals to engage with their surroundings and contribute to their communities actively. It also fosters an enriched sense of place and time, allowing people to connect with their environment's historical and cultural significance. Additionally, embracing this perspective enhances sensory experiences, enriching individuals' interactions with their surroundings and fostering a greater appreciation for their social and ecological contexts. Ultimately, this holistic approach contributes to the promotion of social vitality and equity, ensuring that all members of society have access to meaningful connections with their environment and opportunities for collective well-being (Khorasgani, A. M. et al., 2023).

As a policymaker, the government is pivotal in promoting social justice through environmental stewardship and fostering sustainable tourism practices. Strengthening regulations pertaining to environmental management is imperative to ensure the equitable distribution of resources and mitigate the adverse impacts of tourism on local communities and ecosystems. Additionally, the government can play a proactive role in promoting green tourism habits among visitors by implementing educational campaigns, incentivizing eco-friendly practices, and facilitating the development of sustainable tourism infrastructure. By prioritizing social justice in environmental policymaking and tourism management, the government can contribute to the well-being of marginalized communities, preserve cultural heritage, and safeguard natural resources for present and future generations (Kurniati et al., 2023). In addressing various conflict incidents, particularly those concerning spatial justice, it is essential to go beyond conventional conflict theories and instead incorporate local perspectives. By doing so, we ensure that our analyses and responses remain grounded in the affected communities' specific conditions, values, and social structures. When it comes to resolving conflicts, particularly those related to land disputes, it becomes imperative to adopt settlement models tailored to the unique regional conditions and cultural contexts (Siregar et al., 2023). This approach fosters a deeper understanding of the underlying issues and promotes more effective and sustainable conflict resolution outcomes that align with the principles of spatial justice.

## Socio-Cultural Factors Shaping the Organization and Evolution of Vernacular Settlements and Their Relationship with Spatial Justice

The socio-cultural practices of their communities deeply influence vernacular settlements. These settlements reflect a community’s history, traditions, and socio-economic

dynamics, influencing their spatial organization. For instance, the design and layout of these settlements often prioritize communal spaces that foster social cohesion, cultural practices, and local identity. The presence of shared courtyards, open spaces for cultural ceremonies, or market areas speaks to the community's collective values and its relationship with the environment.

However, these socio-cultural patterns can also result in unequal spatial arrangements. In many cases, hierarchies based on social class, gender, or ethnicity influence who has access to key resources and services within the settlement. For example, lower-income or marginalized groups may be relegated to the peripheries of the settlement, where infrastructure is weaker, and services are less accessible. This contributes to spatial injustices, where certain groups face disadvantages based on their location within the settlement.

The persistence of traditional building techniques, self-construction, and the informal nature of land tenure in many vernacular settlements also poses challenges to achieving spatial justice. While these aspects of vernacular settlements help maintain cultural identity and allow for flexibility in the use of space, they can lead to the uneven distribution of resources and services, perpetuating inequalities within the settlement. The socio-cultural context, therefore, plays a dual role in shaping both the strengths and weaknesses of spatial justice in these communities.

## Role of Local Governance and Community Participation in Shaping Spatial Equity in Vernacular Settings

Local governance and community participation are pivotal in determining the spatial equity of vernacular settings. In many cases, these settlements lack formal governmental recognition, resulting in inadequate infrastructure, poor service delivery, and limited access to public amenities. Without strong governance structures in place, the potential for spatial injustices is heightened, as marginalized communities are often excluded from decision-making processes that impact their spatial environment.

Community participation, however, offers a counterbalance to this governance vacuum. Vernacular settlements often exhibit strong community-driven governance structures, where decisions about spatial organization, resource allocation, and infrastructure development are made collaboratively. This grassroots-level participation helps to ensure that development is aligned with the needs and priorities of the residents, leading to more equitable spatial outcomes. For example, in some cases, communities may come together to pool resources for the construction of shared amenities such as water wells, schools, or health centers, thereby addressing inequalities in access to essential services.

Nevertheless, the effectiveness of community participation is often limited by external factors, such as the lack of formal recognition by municipal authorities or exclusion from broader urban planning processes. In situations where local governance is weak or fragmented, vernacular settlements may face difficulties in advocating for their rights or accessing resources from higher levels of government, exacerbating spatial inequities.

## Comparison of Spatial Justice Indicators Between Vernacular and Formal Urban Settlements

When comparing spatial justice indicators between vernacular settlements and formal urban areas, several disparities emerge, reflecting the broader implications of urban planning policies on marginalized communities. In formal urban settlements, access to infrastructure, services, and resources is typically regulated and provided by municipal authorities, often adhering to formal planning guidelines. This results in better infrastructure, well-defined public spaces, and organized service delivery. However, formal settlements may also reflect economic inequalities, where high-income groups have better access to prime locations and public services, while lower-income groups are pushed to the margins.

In contrast, vernacular settlements tend to operate outside the formal planning framework, which leads to greater flexibility in the use of space but also contributes to issues

of spatial justice. For instance, informal settlements often lack adequate access to basic services such as water, sanitation, electricity, and healthcare. These communities are often located in peripheral areas, vulnerable to environmental risks such as flooding or landslides, further exacerbating spatial injustice.

Moreover, while formal settlements may have structured access to public services, vernacular settlements often rely on community-driven initiatives, where access to resources is uneven and contingent upon the social capital of individuals or groups. This distinction highlights the broader structural inequalities that are embedded in urban planning policies, which tend to favor formal development while neglecting the needs of informal or vernacular communities. Addressing spatial justice in vernacular settlements thus requires recognizing and rectifying these systemic inequalities.

### Policy Recommendations and Spatial Interventions for Promoting Equitable Spatial Arrangements in Informal Vernacular Settlements

To promote spatial justice in vernacular settlements, a range of policy recommendations and spatial interventions can be proposed:

Governments should recognize informal vernacular settlements within formal planning frameworks, ensuring that these communities have access to basic services and infrastructure. This recognition could involve granting formal land tenure rights, providing residents with security and encouraging investment in improving their living conditions.

- Urban planning processes should include representatives from vernacular communities to ensure that their needs and priorities are reflected in the broader urban development agenda. This participatory approach would empower local communities and help bridge the gap between informal and formal settlements.
- Local authorities should adopt a decentralized approach to service delivery, allowing communities to have greater control over the allocation and management of resources. This would enable vernacular settlements to develop infrastructure that is tailored to their specific needs, fostering greater spatial equity.
- Investment in integrated infrastructure that connects vernacular settlements with formal urban areas can help reduce spatial disparities. Improving transportation networks, water supply systems, and public facilities in these areas would enhance residents' access to services and opportunities, reducing social exclusion.
- Empowerment: Supporting community-based organizations through capacity-building programs can strengthen local governance structures and enhance community participation in decision-making. Empowered communities are better equipped to advocate for their rights and contribute to more equitable spatial arrangements.
- Given the environmental vulnerabilities of many vernacular settlements, policies should focus on improving resilience through sustainable building practices and disaster risk reduction strategies. This would promote spatial justice and safeguard these communities from environmental hazards.

By implementing these policy recommendations and spatial interventions, urban planners and policymakers can foster more equitable and just spatial arrangements in vernacular settlements, ensuring that these communities have fair access to resources, infrastructure, and development opportunities.

## Conclusions

Spatial justice cannot be seen without social, political, economic and environmental justice. Spatial justice provides a holistic lens through which we can better understand and resolve the complex and interconnected challenges faced by communities, ensuring equitable access and participation for all in the shared spaces of society.

**1. Definition and Nature of Informal Vernacular Settlements**

Informal Vernacular settlements are traditional or indigenous environments shaped by local culture, geography, and available resources. These settlements often embody sustainable practices and maintain a close relationship with their surroundings. This review paper has examined how spatial justice can be interpreted within these localized, community-oriented spaces governed by informal rules and community-led practices rather than state-imposed regulations.

**2. Defining Spatial Justice**

Spatial justice ensures the fair distribution of resources, opportunities, and benefits across spaces, regardless of identity or status. It promotes equitable access, values diversity, encourages community participation, supports sustainability, and fosters safety and resilience for all individuals and communities.

**3. Spatial Justice Frameworks**

Spatial justice, in many studies, refers to the fair and equitable distribution of spaces and resources within human settlements. It includes the rights to space, accessibility, inclusiveness, and opportunities to participate in decision-making about spatial organization.

**4. Role of Culture and Community in Spatial Organization**

Many studies emphasize the significance of cultural practices and collective traditions in shaping the spatial layout of vernacular settlements. Customary laws and communal governance are often pivotal in the distribution and use of space.

**5. Challenges to Spatial Justice in Vernacular Settlements**

Several documents highlight challenges, such as the marginalization of vernacular settlements in urban planning policies, land rights disputes, inadequate access to basic services, and susceptibility to external developmental pressures.

**6. Sustainability and Resilience of Vernacular Settlements**

Many vernacular settlements exhibit sustainable solid practices, such as resource efficiency, climate responsiveness, and community resilience. However, these qualities are often threatened by modernization and state interventions.

**7. Planning and Policy Implications**

A significant number of documents discuss the role of planning in achieving spatial justice. While formal planning often marginalizes vernacular settlements, participatory and community-driven planning processes show potential for addressing spatial injustices.

This document survey reinforces that the investigation into spatial justice within vernacular settlements must account for unique socio-cultural, environmental, and economic dynamics of these spaces. The research concludes that achieving spatial justice in these contexts requires a localized, community-focused approach, recognizing the distinct values and practices that define vernacular life. Furthermore, it suggests that policy and planning efforts must move towards inclusive, culturally-sensitive frameworks that respect and preserve the integrity of these settlements while addressing issues of equity and access. Future studies could assess the balance between maintaining sustainability and achieving spatial justice, particularly how resilient practices in informal vernacular settlements could be harnessed to foster equitable spatial outcomes.

## Ethics Declaration

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