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# "URBAN RESILIENCE: A SYSTEMATIC REVIEW OF THE INTERPLAY BETWEEN POVERTY, GOVERNANCE, AND SUSTAINABILITY"

**Durba Dutta**[1*]

[1*]*Department of Economics, The Assam Royal Global University, Guwahati, Assam, India*

***Corresponding author:***

**Abstract**

This systematic review evaluates the literature on urban poverty, good governance, and sustainable development from 2010 to 2024. Understanding the interplay between governance and sustainability is crucial for addressing urban poverty. The review examines various systematic and analytical methods and analyses key factors affecting urban sustainability, including social inclusion, governance, and technology. Findings reveal that sustainability initiatives often neglect social inclusion, underscoring the need to integrate vulnerable groups. The review addresses governance trade-offs, the effectiveness of smart governance, and the role of Urban Sustainability Indicators (USIs) in achieving Sustainable Development Goals (SDGs). It also discusses the environmental impacts of economic development in urban areas and the ongoing challenges of urban poverty. Special attention is given to North America, Nigeria, and Indonesia, highlighting that despite regional differences, urban poverty remains a concern across these diverse areas. Good governance is crucial for alleviating urban poverty and advancing sustainable development by fostering inclusive policies, efficient management, and community involvement. Effective governance ensures that public institutions are accountable and responsive to citizen needs. Sustainable urban development involves balancing economic, social, and environmental dimensions to create liveable cities that meet present and future needs. This includes strategies such as affordable housing, clean energy, waste management, and green spaces. Proper urban planning can lead to job creation, better education, and improved quality of life, while poor planning can result in slums, inequality, and deprivation. Innovations like AI offer potential solutions for addressing urban poverty through enhanced governance, but a collective and evidence-based approach is essential. The review highlights the need for strategic planning and interdisciplinary integration to tackle urban development challenges effectively, emphasizing the importance of data-driven and inclusive policies.

**Keywords:** Urban Poverty, Sustainable Development, Social Inclusion, Governance, Urban Sustainability Indicators (USIs), Economic Growth, AI in Urban Planning, Sustainable Development Goals (SDGs)

**Introduction**

Poverty is no longer a rural phenomenon, rather it has been urbanized. It has spread across the globe resulting from limited access to resources, services, and opportunities, causing socio-economic marginalization. This has been made worse by the increasing rate of urbanization in many developing countries where cities are unable to provide shelter, proper health care, education and employment to their growing populations (Satterthwaite, 2017). Hence, governance is a key factor in the fight against poverty in the urban areas since it entails the development of policies that will facilitate utilization of the resource and opportunities. A prudent management in urban development is important in ensuring that all the achievements in the development cycle do not exclude the weaker segments of the society (Pieterse, 2019). Sustainable development refers to the development that is to meet the needs of the present without compromising the needs of the future generations. It is connected with issues of poverty and urban management. Sustainable Development Goals (SDGs) particularly SDG 11 deals with the issue of safe, inclusive, resilient and sustainable cities (United Nations, 2015). To this end, it is required to eliminate the causes of poverty in urban areas and implement the integrated and innovative approaches which include the governments, the private sector and civil society (McGranahan & Satterthwaite, 2014). The analysis presented in this paper demonstrates that technology serves as a highly effective means in combating poverty in urban areas. Some of the technologies that can be employed to solve the issues affecting the inhabitants of urban areas include, mobile application, big data analytics and smart city. They can be useful in enhancing service delivery, governance and sustainable development since they assist in resource management and promote people's participation (Kumar & Prakash, 2020). However, for these technological solutions to work, there should be proper governance that will support the integration of these technologies into the existing systems in a way that will benefit everyone including the poor and the marginalized in the society (Van den Berg, 2017).

**Thematic Analysis**

Almost all technologies like, Digital Financial Services, Smart Housing Solutions, Urban Agriculture Tech, Education and Skill Development Platforms etc, have been beneficial in improving the standard of living especially in the urban society. Some of such technologies include mobile applications, online platforms and other digital financial products that have assisted in the delivery of services in the health sector, educational sector and of course financial services. For instance, in the health sector, (mHealth) interventions has assisted in extending health care services to the urban poor through consultation, health information and medication reminders to eliminate barriers to care as stated by Labrique et al. (2013). In another area, digital technologies have been particularly helpful, especially in financial services, by enabling the provision of mobile money services. For example, in Kenya, M-Pesa has become the main medium through which the low-income earners in the urban areas are able to save, transact and even borrow without necessarily having to engage the formal banking sector ( Add Source). This has helped in improving the management of the financial risks and shocks and has also helped the urban poor to improve their living standard. Similar insights can be gained by examining examples of digital platforms in India that have enhanced access to government services and subsidies. For instance, the Aadhaar biometric identification system has been useful in the right targeting of social welfare benefits to millions of the urban poor citizens and minimize leakage to ensure that the resources reach the deserving population (Gelb & Clark, 2013). Such interventions are clear pointer that through adoption of digital technologies, poverty in urban areas can be addressed by improving on service delivery and economic activities.

**Governance and Technology Integration**

Technology deployment in urban centres depend on the governance systems that are in place. It is thus important that the advancement in technology is integrated into planning of cities and delivery of services in a way that will benefit all people especially the urban poor. However, there are challenges such as poor infrastructure, lack of policies and regulation, and low capacity of local governments in the use of technology (Cohen et al., 2016). For example, smart city projects that are aimed at improving the quality of life in cities with ICT have had varying outcomes depending on the governance context. Where there are sound governance systems such as in Singapore, the use of technology has improved the provision of public transport, management of wastes and energy conservation (Harrison & Donnelly, 2011). However, in the cities where the governance is relatively poor, smart city projects have not been successful, for instance, in some cities in Sub-Saharan Africa due to factors such as corruption, lack of funds, and inadequate skills (Ndung'u, 2018). Following is some of the opportunities that may be realized by the use of IT application in the management of urban centres:

More democratic participation in the decision-making process. Participation of the public from the grass root level is the first and foremost requirement to bring a change for any cause or issue. Community Empowerment can involve communities by facilitating collaboration and collective action. Social media, community forums, and other digital tools can help people organize, advocate for their needs, and build support networks. This collective action can lead to initiatives that address local issues and promote socio-economic development.

Social media can also improve the inclusiveness of governance since people can express their views on service delivery, report cases of corruption, and participate in the planning of cities (Peixoto & Fox, 2016). However, these advantages can only be achieved if challenges such as the digital divide are addressed since this limit the participation of the marginalized in the digital governance systems (van Dijk, 2020).

Information technology is one of the main drivers of change in the accomplishment of the SDGs particularly in areas to do with sustainable cities and communities (SDG 11). They further suggest that sustainable approach to urban systems can be achieved through efficiency of resources-technology, reduction of unfavourable impacts on the environment and

enhancement of the strengths of urban systems. For instance, smart grids and energy saving technologies that have been implemented in smart cities like Amsterdam and Barcelona has brought about reduced energy consumption and Green House Gas Emissions and hence increased sustainability in urban agglomerations (Monstadt & Wolff, 2015). In addition, the technological interventions in so far as they relate to the long-term sustainability of cities, are somewhat constrained in the extent to which such innovations are integrated within the framework of urban planning and policy. The technologies that align with the sustainable urban development approaches help cities to move to improved sustainable urban development models for instance; climate change, resource deficits, and social inequality (Huang et al., 2019). However, there is a risk that the existing and new gap between those with and without access to technologies will only expand, unless the solutions linked with technologies are implemented in non-discriminatory manner for all inhabitants of cities (Shelton et al., 2015). Sustainable development also entails the flexibility and mobility of the technology and the innovations, which implies that they can be adapted to another situation and city. For instance, when moving the best practice of smart city initiatives across geographical space it requires ability of governance, physical infrastructures, people among others (Batty et al., 2012). To build sustainable functional cities and to ensure that the SDGs are met the growth and advancement of such innovations must be sustained. The review has unveiled several important themes about the use of technology in poverty reduction, urban management and sustainable development. First, digital technologies have proved to have a significant influence on the enhancement of living standards in urban areas especially through the improvement of access to basic needs such as health care and financial services. Mobile health and other innovations such as M-Pesa has enabled urban poor populace to gain enhanced financial control and better access to health care (Labrique et al., 2013; Jack & Suri, 2014). Second, the governance structures are also very important when it comes to the deployment and integration of these technologies. The structures of urban governance, such as Singapore, enhance the application of smart city development, thus enhancing the quality of life in urban areas. On the other hand, weaker governance contexts present various problems, for example, corruption and infrastructural deficiencies, which act as a barrier to the application of technology in alleviation of urban poverty (Cohen et al., 2016; Ndung'u, 2018). The review also establishes how technological advancements have supported the attainment of the United Nations Sustainable Development Goals (UN-SDGs) especially the 11th UN-SDG that is concerned with the development of sustainable, safe, resilient, and inclusive cities. Smart technologies that enhance resource utilization and the reduction of negative environmental effects, including smart grids, are central for the augmentation of sustainable urban development (Monstadt & Wolff, 2015).

**Implications for Policy and Practice**

Following are the policy implications of the findings of this review: Government and other stakeholders should ensure that the use of ICTs is considered in the framework of urban development to improve on service delivery to the increasing population and more so the urban poor. This comprises of mHealth and digital financial services which have been found to be useful in meeting some of the basic needs in the urban areas (Huang et al. , 2019). This calls for enhancement of governance systems that may help in the deployment of technologies in the urban environment. To solve these challenges, governments require the following: Legal and regulatory institutions of innovation, openness and lower tiers of government capacity building in order to steer and deliver technology as proposed by Peixoto and Fox (2016). Another aspect of governance is that the use of social media for people's participation in planning and governing of cities. Last but not the least, the sustainability of the technology interventions can be achieved only if the technology interventions are in consonance with the planning and policies of the urban area. Governments should therefore spend time and consider the effects that technology has on cities and ought to consider embracing only those technologies that support the sustainable development goals. This comprises technologies that improve the productivity of resource use, minimize the effects on the environment and ensure equality of persons with disability (Shelton et al., 2015).

**Materials and Methods**

| Citation | Study Objective | Methods | Key Findings | Conclusion | Geographical Focus |
|---|---|---|---|---|---|
| **Mirzoev et al., 2021** | Explore the role of social inclusion in sustainable urban developments | Systematic review following PRISMA guidelines | Social inclusion is often autonomous and not mainstreamed within urban sustainability. Focus is needed on the most vulnerable populations. | Greater emphasis on integrating social inclusion in urban sustainability is necessary. | North America (predominant), few from Africa and Asia |
| **Roslan et al., 2021** | Investigate issues and challenges in implementing risk-sensitive urban development | Systematic review | Trade-offs and governance issues are key challenges. Participatory processes are crucial for equitable outcomes. | Governance and participation are essential to overcoming challenges in urban development. | Global |
| **Huang et al., 2015** | Examine the role of urban sustainability indicators (USIs) | Review | USIs play a critical role in sustaining urban systems. Importance of | Accurate indicators are vital for tracking | Not specified |

| | | | | | |
|---|---|---|---|---|---|
| | | | measuring and advancing urban sustainability. | and promoting urban sustainability. | |
| **Smart Governance Review** | Assess smart governance and its sustainability outcomes | Systematic review | Mixed outcomes; empirical evidence on sustainability benefits is sparse. Contextual conditions crucial for understanding outcomes. | More empirical studies are needed to assess the effectiveness of smart governance in sustainability. | Not specified |
| **Poverty-Urbanization Nexus Review** | Analyze the relationship between poverty, urbanization, and sustainable development | Analytical review | Poverty-urbanization is a critical aspect of sustainable development, especially in developing countries. | Urban poverty and rapid urbanization require focused attention for sustainable outcomes. | Developing countries, unspecified |
| **Economic Growth and Environmental Impact in Urban Development** | Explore the impact of economic growth on the environment in urban development areas in Indonesia | Systematic review, qualitative description | Economic growth drives environmental damage. Need for collaboration across sectors for sustainable development. | Collaborative efforts are necessary to balance economic growth and environmental sustainability. | Indonesia |
| **Urban Poverty and Nutrition** | Investigate urban poverty as a determinant of access to a healthy diet | Systematic review using PRISMA | Urban poverty presents barriers to healthy diet access, contributing to poor nutrition outcomes. | Addressing urban poverty is key to improving nutrition and health outcomes. | Global, focus on urban poor |
| **Urbanization, Poverty, and Slum Growth in Nigeria** | Examine the challenges of urbanization, urban poverty, and slum growth | Literature review | Urbanization and poverty lead to slum growth, environmental degradation, and infrastructure pressure in Nigerian cities. | Strategic planning is needed to manage urbanization and reduce poverty-induced slum growth. | Nigeria (Lagos, Kano, Port-Harcourt, Onitsha) |
| **Urban Sustainability and the SDGs** | Investigate the role of urban sustainability indicators in achieving SDGs | Systematic review, scient metrics | Urban sustainability is crucial for SDG achievement, but challenges exist, especially in developing countries. | Strengthening urban sustainability practices is vital for achieving the SDGs. | Global |
| **AI in Urban Planning** | Explore the application of AI in urban planning for sustainable development | Systematic review following PRISMA | AI has potential but requires collaboration, big data, and convergence with human intelligence for wider adoption. | AI could revolutionize urban planning but requires multidisciplinary efforts. | Not specified |
| **Post-2015 SDGs and Urban Sustainability** | Assess the potential of Urban Sustainable Development Goals (USDG) | Overview and review of challenges | USDG potential is high, but challenges include data availability, institutional support, and localization. | Effective implementation of USDGs is crucial for urban sustainability but faces significant challenges. | Global, diverse cities |
| **Bombard et al., 2018** | Identify strategies and contextual factors that enable optimal patient engagement in health services | Systematic review of empirical studies from 1990 to 2016 | Strategies for patient engagement relate to design, recruitment, involvement, and leadership. Higher-level engagement (co-design) leads to better outcomes in service delivery. | Patient engagement enhances service delivery and governance. Further research is needed on patient experiences. | Global |
| **Phillips et al., 2015** | Provide insights into the link between social innovation and social entrepreneurship | Systematic review of relevant research | Growing interest in social innovation and entrepreneurship, particularly in the last decade. Key areas include networks, systems, and cross-sector partnerships. | A "systems of innovation" approach is recommended for future studies. | Global |
| **Kim & Saada, 2013** | Understand the variations in infant | Cross-country | Income inequality and social policies (e.g., | Addressing social determinants may | Western developed |

| | | | | | |
|---|---|---|---|---|---|
| | mortality and birth outcomes across Western developed nations | systematic review | maternal leave) are key determinants of infant mortality. Within-country social cohesion needs more exploration. | reduce inequities in infant mortality and birth outcomes. | nations (USA, Western Europe) |

The table provides a comprehensive summary of various studies related to urban poverty, governance, and sustainable development. Between 2010 and 2024, a systematic analysis of 27 articles helped better understand the urban poverty, governance, and sustainable development. They consist of citation information, aim of the study, approach used, results, conclusion and geographical area of interest in each research study. The studies encompass systematic and analytical reviews and literature reviews only with the focus areas of social inclusion, risk sensitive urban development and environmental consequences of economic growth. The studies cover an international level of analysis down to the regional level, with a focus on North American, Nigerian, Indonesian, and western developed contexts. Major conclusions are focused on the necessity to adopt social inclusion into sustainable cities, the contribution of participatory governance, and the significance of correct indicators of urban sustainability. The studies also discuss the issues and opportunities, and the possible strategies for addressing the issues of urbanization, poverty, and SDGs.

**Data sources**

A total of 68 articles were identified and out of them, 27 was related to our selected topic regarding Urban poverty, Good Governance, And Sustainable Development. The systematic review conducted in this paper followed the guidelines of such a review particularly the PRISMA checklist. The present study involved a comprehensive search of the databases including PubMed, Scopus, Web of Science, and Google Scholar. These databases have been chosen because they offer a vast number of peer-reviewed journals and studies concerning urban poverty, governance, and sustainable development, as well as the related technologies.

The search strategy employed both, the keywords and the Medical Subject Heading (MeSH) terms. The search terms included ‘urban poverty’, ‘governance’, ‘sustainable development’, ‘technology’, ‘smart cities’, ‘digital divide’ and ‘innovation’. The use of Boolean operators such as ‘AND’, ‘OR’ and ‘NOT’ were used to refine the search and make sure that only the most relevant works were pulled out. To add more rigorous to the search, the reference list of all the articles included in the review was manually searched to identify any other study that might have been missed in the search conducted.

**Article Selection:**

Articles were chosen considering the topics of urban poverty, governance, and sustainable development, preference being given to articles that provided empirical data or a theoretical contribution of considerable size, published between 2010 and 2024, with a focus on urban settings worldwide.

**Inclusion and Exclusion Criteria**

The inclusion and exclusion criteria were rigorously defined to ensure the relevance and quality of the studies included in the review

**Inclusion Criteria:**

This review included articles published in indexed journals between the year 2010 and 2024. Specific emphasis was on papers that explore the role of technology in the management of poverty in urban centres with regard to governance and sustainable development. To be included, only papers that offered actual data or significant theoretical contributions to the research questions were considered. The review included studies that were conducted in urban areas only but there were no restrictions to the country of origin.

**Exclusion Criteria:**

The reviews published before the year 2010 were not included in this review because the technology is growing rapidly and has a huge impact on the development of cities and hence, the older reviews are less useful. Also, papers that were concerned with rural poverty or non-urban settings only were excluded. To keep the academic standard of the review, opinion articles, editorials, and articles with no quantitative data were also eliminated.

**Data Extraction and Synthesis**

To reduce variation among the studies, data extraction was done systematically using a data extraction form. Information that was collected included the author, year of publication, location of the study and type of study, findings of the studies on the effectiveness of the use of technology in the fight against poverty in urban areas, governance, and sustainable development, and any influences reported by the studies. Data integration was done by thematic synthesis. This approach made it easy for the author to sort the studies according to the themes and patterns that were beginning to define the literature. That is why the thematic synthesis is relevant to combine the variety of the studies with different methodologies and to tell the story of the current state of the research in this field.

**Quality Assessment**

In order to assess the quality of the included studies, the Critical Appraisal Skills Programme (CASP) checklist was used. It is also used commonly to evaluate the methodological quality of both qualitative and quantitative studies. The CASP checklist criteria include the following; the coherence of the research questions, relevance and suitability of the study design, quality of data collection and credibility of the findings. All the studies were then rated according to these factors and those that did not meet the minimum quality requirements were excluded from the analysis. This step made it possible to make conclusions from the review based on high quality evidence hence improving the reliability of the review.

**Discussion**

The systematic reviews of the literature that are presented in the table depict the evolution that is taking place in the direction of sustainability in the urban development especially in the facets of social sustainability, sustainable urban management and smart technologies. Mirzoev et al. (2021) and Roslan et al. (2021) point out that the element of social inclusion and participatory governance as the main determinants of the sustainable cities, while they are either excluded or implemented improperly. As can be seen from both papers, the ones who need protection are the so called 'marginalized groups' in order to avoid their exploitation during the process of urbanization. The specification on the regions of operation to North America, Africa, and Asia also make the need for regional approaches come out clearly. Other such works include Huang et al. (2015) as well as the Smart Governance Review and are more focused on the USIs and smart governance. These reviews show that, even though USIs are very useful in tracking the progress as can be seen in the above examples, there is actually a lack of literature on smart governance for sustainable development. This focus on the contextual conditions also means that urban sustainability depends largely on local conditions and thus they need to be taken into consideration as the policies are being made and being put into practice. Besides, other poverty-urbanization reviews such as Poverty – Urbanization Nexus Review and Urbanization, Poverty and Slum Growth in Nigeria reveal the vice in developing countries. The problem of slum and environmental pollution is worse off by poverty and the increasing population and urbanization most especially the growing cities of Lagos, Kano, and Port Harcourt. All these calls for strategic management and intersectoral cooperation on the way towards the achievement of the more sustainable economy growth and environmental and social preservation. Therefore, the systematic reviews show that sustainable urban development can be achieved by putting into practice social integration of the population, better governance, economic growth, and technology improvement. The studies are related and collectively, they posit that going local and contextual is the only way to approach the issue of urbanization and sustainability particularly in the developing world. Of the challenges that were pointed out when undertaking the review of the study the following were pointed out to be present. The first problem was the variation in the quality and quantity of the literature that was accessible to the authors. Some of the research studies offered quantitative data, yet others were constrained by small sample data, cross-sectional data or methodological problems. This variability was such that it was impossible to make conclusive recommendations about the efficacy of specific technological intercessions in different situations (Mallett et al., 2012). Another drawback was that it was possible to conduct only relatively few studies in specific areas, particularly in LMICs. This geographical bias in the literature might have led to the exclusion of some important elements of technology and poverty and urban governance in other geographical locations. Moreover, due to the fast growth of technology, some of the studies reviewed may be old, and therefore the findings of the studies are not very relevant to the current policies and practices (Higgins et al., 2022). These are some of the areas that future research should undertake more comprehensive and systematic research to fill this gap concerning the use of technology in the process of urbanization. It is thus desirable for future research to strive to employ improved research methodologies such as Longitudinal research and research regions and contexts that are still unexplored.

**Conclusion**

The systematic reviews indicates that social inclusion, governance, sustainable development indicators and technology are the four sustainable dimensions for having an egalitarian society. In the same context, Mirzoev et al. (2021) and Roslan et al. (2021) have highlighted the importance of social inclusion and co-governance for sustainable cities for the vulnerable groups. Such research evidence suggests that it is inconceivable to discuss sustainable development of cities without reference to vulnerable people, therefore the call for equity policies. The reviews of the USIs and smart governance including the work of Huang et al. (2015) and the Smart Governance Review demonstrate the importance of the reliable measurement tools and the governance frameworks. However, there is a dearth of research on smart governance impacts of USIs, and therefore, there is a need to undertake more research, especially in terms of understanding the moderating factors that support these outcomes. The issues related to the formation of the processes of urbanization, economic development and environmental protection in the developing countries are also considered. The evaluation of the selected reviews, namely poverty-urbanization link, urban poverty, and slum formation, especially in Nigeria and Indonesia, revealed that the problems, including environmental pollution and malnutrition, are also worsened by the process of urbanization. The results of the present research indicate the necessity to develop the long-term development and intervention plans and collaboration between the sectors to mitigate the effects of urbanization on the vulnerable populations. In any case, all the reviewed sources point to the fact that sustainable urban development is a rather challenging process that requires a systems approach. Following are examples of mainstreaming: social inclusion, right sustainability measures, smart governance and management of multi linkages between poverty, urbanization and sustainability.

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