

RESEARCH ARTICLE

EVALUATION OF ENVIRONMENTAL RESILIENCE AS A STRATEGIC PLANNING TOOL TO URBAN STABILITY IN KEFFI, NASARAWA NIGERIA

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ABSTRACT

Resilience is often seen as a good thing. If an ecosystem or human society is resilient, it will be able to withstand the disruptions it faces. For a system to maintain a particular state, it must not be subjected to disturbances that exceed its ability to recover from that state. So resilience, like carrying capacity, is closely linked to sustainability. This is why it efforts to improve resilience from groups like the Resilience Alliance. They want our human-environment system to be preserved. City growth and sustainability depending on the stability of the urban indexes such as new development attracted by the people to economic prosperity, proximity as well as the political stability in the area. Keffi is being growing base on the urban growth indexes stated. Sampling based on the indexing of the major factors of sustainability was conducted. About 95% of the inhabitant in the study area agreed upon educational expansion is responsible for urban sprawl as well as the city resilience 80% on proximity index, 70% on economic stability, 60% social resilience and 45 % on political stability of the inhabitant.

KEYWORDS

Urban city, Resilience Sustainability, Growth, Planning

1. INTRODUCTION

Developing urban resilience is salient achievement in the transformation of resource-based urban areas. This study assesses the impact of sustainable growth and conversion in resource-based cities on infrastructural growth, economic base and urban ecology for social resilience. The results indicate that the sub-resilience illustrate an obvious upward movement. Furthermore, the economic index for infrastructural social resilience have a spatial aggregation effect (Chai and Sun, 2023). Transitions towards sustainable development can make tremendous achievement to ecological resilience in resource-based cities, but it can also negatively impact social resilience. Therefore, governments need to address the social issues that can arise during transitions. This study provides a theoretical basis to inform government policy adjustments.

Regional disaster and risk produces by geomatics factors have risen in contemporary ages, posing enormous challenges to achieving the 2030 Global Sustainable Development Goals. Urban resilience determines how cities developed, adapt, and recover from external shocks. Recently, practical analysis and evaluation of urban resilience in south-east Asia are still lacking. Some researchers developed the urban resilience index (URI) (Zeng et al., 2022; Amirzadeh et al., 2022). Cities around the world face a range of threats, such as disasters and other disruptions. Urbanization is complex system, and inadequate resilience may hinder the growth and development of the subsystems which result in major losses for whole system (Lu et al., 2023). The vulnerabilities of cities are becoming bottlenecks that limit urban resilience and sustainable development in the face of disasters. Urban resilience, which has gradually become a hot topic in urban research worldwide, refers to the ability of cities to withstand, absorb, adapt, and recover from the impact of risks (Sun et al., 2023).

The goal of resilient urban development is to “make urban areas and

human settlements safe, resilient and sustainable” (UN, 2015). The term “resilience” originates from the Latin word “resilio”, the term has being applied in different field of study especially in environmental science, management and planning, sociology and other disciplines (Smit et al., 2000). The present theories of urban resilience refer to the activities of complex urban system to prevent, reuse and discover from danger from the environment. The world urbanization rate was 56% in 2021 and the proportion of people living in urban areas is expected to increase to 68% by 2050 (Bernstein, 2022). Urbanization not only brings economic growth but also lead to diversification of and it distributions such as climate change, natural disasters and social crises, which greatly impact the quality of life of urban residents (Meerow and Newell, 2021). Urban growth poised to constitute a threat to the security and sustainable development of cities (Serbanica and Constantin, 2023). The ability of an urban system or network to respond, adapt, and recover from these potential risks depends on the resilience of the city (Wu et al., 2023).

Urban resilience, which is related to the urban planning and construction system, has become a popular academic topic, and researchers have also defined this concept from many perspectives. Especially in the field of climate change, resilience theory is considered one of the most effective methods to mitigate ecological problems. For example, the concept of combining urban resilience measurement is a multi-attribute decision-making problem. (Shamsuddin, 2020).

2. METHODOLOGY

Study adopted an appropriate statistical analysis. These include the use of R² from the regression analysis model. And the use of pie chart to illustrate the magnitude of the urban resilience in the study area.

3. RESULT AND DISCUSSION

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The impact of urban resilience and stability index in this Study are based on the peripheral growth. These indexes include Social factor Economic factor Proximity factor Educational factor Political stability.

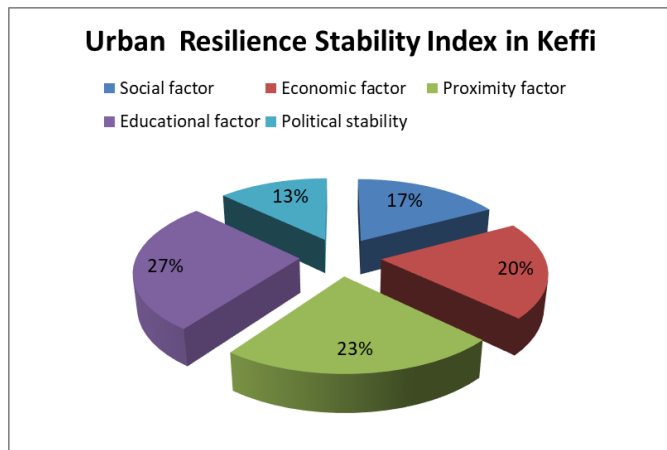


Figure 1: Urban stability resilience in Keffi

The two major indexes from the urban stability index in Keffi are the proximity to the Federal Capital Territory Abuja and the establishment of educational institution Nasarawa State University Keffi. As shown the chart in figure 1, other factors include socio-economic and political stability.

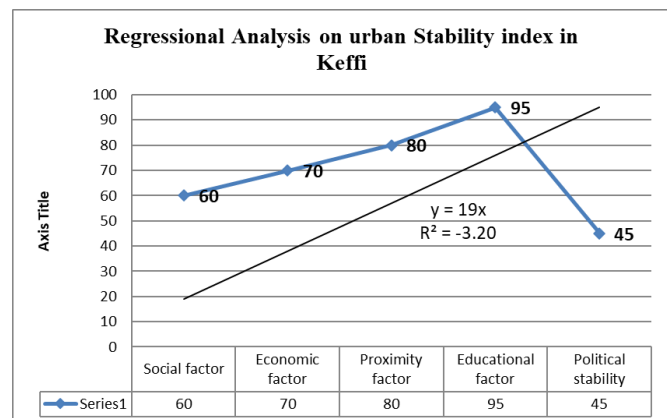


Figure 2: Stability Index of Urban Resilience in keffi

4. CONCLUSION

Two important factors of resilience based on this study have been identified: the proximity factor of the study area to Keffi to Abuja has 80% and the educational factors with 95% growth rate. Monitoring urban resilience is paramount in determining the rate at which urban green growth developed overtime. It was discovered that the introduction of new opportunities in term of urban education facilities. Urban resilience as so far identified other factors in the environment; these include socio-economic resilience, political and neighbourhoods' peripheral growth. All of the new approaches of urban resilience discussed in other previous cities have been occurring in Keffi these days.

RECOMMENDATION

- Government should adopt new urban resilience strategies to control sustainable city development in our environment.

- Urban developers as well as the estate engineers have adopted the new urban growth in terms of population growth. To avoid unaided growth, the urban resilience method should be practiced
- Stakeholders and city developers most follow the standard of urban resilience to attract investors into the city.

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