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Identification and Analysis of the Components Affecting Local Sustainable Development Around Tehran's Mosalla (Case Study: Abbas Abad Neighborhood)

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Abstract

Background and Objective: Urban megaprojects, as driving forces of transformation, play a decisive role in shaping the structure of cities; however, their impacts on the sustainable development of surrounding neighborhoods are complex and sometimes contradictory. The establishment of the Grand Mosalla of Tehran in the Abbas Abad neighborhood, in addition to significant physical changes, has led to the emergence of a paradox between economic prosperity and the quality of life of residents, which necessitates a scientific investigation of its underlying components. This study aims to identify and analyze the components affecting local sustainable development around Tehran's Mosalla and to examine the interrelationships among these components.

Methodology: In terms of nature, the research is descriptive–analytical, and in terms of purpose, it is applied. Field data were collected through a researcher-designed questionnaire from 384 residents of the Abbas Abad neighborhood. To analyze the data and extract the latent dimensions of the project's impacts, statistical tests including the t-test, factor analysis, and Pearson correlation analysis were employed using statistical software.

Results and Findings: The results of the factor analysis revealed that the impacts of the project can be classified into nine main factors encompassing infrastructural, economic, social, and environmental dimensions. Moreover, the findings of the correlation analysis indicated a significant relationship between infrastructural and economic growth and environmental challenges as well as demographic changes. In other words, although the presence of the Mosalla has led to increased employment, improved services, and physical transformations, this development process has simultaneously been accompanied by a reduction in green space per capita, increased pollution, and the displacement of the indigenous population. The study concludes that achieving sustainable development in this neighborhood requires managing the conflict between the components of economic growth and the preservation of environmental quality and social stability.

Keywords: "Local sustainable development", "Tehran's Mosalla", "driving forces", "development components", "Abbas Abad".

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EXTENDED ABSTRACT

Introduction

Urban megaprojects have increasingly become key instruments of spatial transformation and strategic urban development. Designed to enhance infrastructure, strengthen urban identity, stimulate economic growth, and improve quality of life, these large-scale interventions often function as powerful driving forces within metropolitan areas. However, international experiences demonstrate that their impacts on surrounding neighborhoods are complex, multidimensional, and sometimes contradictory. While such projects may generate economic vitality and infrastructural improvements, they can simultaneously produce environmental pressures, social displacement, and spatial inequalities.

The Grand Mosalla of Tehran, one of the most significant religious–cultural megaprojects in Iran, represents a prominent example of this duality. Located in the Abbas Abad neighborhood one of Tehran's central and strategically important urban areas—the project has triggered substantial physical, economic, social, and environmental transformations. The establishment and expansion of the Mosalla have altered land-use patterns, increased commercial and administrative activities, attracted large-scale religious and cultural events, and reshaped the socio-economic structure of the surrounding community. At the same time, it has contributed to rising property values, increased traffic congestion, environmental stress, and changes in demographic composition.

Despite the importance of these transformations, there remains a lack of comprehensive analytical frameworks that systematically identify and evaluate the components influencing local sustainable development around such megaprojects. The central research question of this study is: What are the main components affecting local sustainable development around Tehran's Mosalla in the Abbas Abad neighborhood, and how do these components interact with one another? Therefore, the primary objective of this research is to identify, classify, and statistically analyze the multidimensional impacts of the Mosalla project and to examine the interrelationships among physical, economic, social, and environmental factors shaping local sustainability.

Methodology

This study is applied in purpose and descriptive–analytical in nature, employing a mixed-method approach combining quantitative and qualitative techniques. Data collection was conducted through two primary sources: documentary research and field surveys.

In the documentary phase, official municipal reports, statistical yearbooks, land-use maps, and previous academic studies were reviewed to identify structural and functional changes in the Abbas Abad neighborhood before and after the establishment of the Mosalla. Indicators such as land-use transformation, green space per capita, number of events, employment levels, and property prices were analyzed comparatively.

Data reliability was confirmed using Cronbach's alpha coefficient ($\alpha = 0.70$), indicating acceptable internal consistency. For data analysis, several statistical techniques were employed using SPSS software, including one-sample t-tests, exploratory factor analysis (EFA), and Pearson correlation analysis. The Kaiser–Meyer–Olkin (KMO) test (0.568) and Bartlett's test of sphericity ($p < 0.001$) confirmed the adequacy of the data for factor analysis. Varimax rotation was applied to extract latent factors with eigenvalues greater than one.

Results and Findings

Documentary analysis revealed significant spatial and functional changes in Abbas Abad following the construction of the Mosalla. Residential land use decreased by 10%, and green space declined by approximately 16.67%, while commercial and administrative/cultural land uses increased by 10% each. The number of religious events rose by 200%, and cultural events increased by 300%. Local employment doubled from 50 to 100 units, and property prices increased by 100%, reflecting strong economic stimulation. However, air pollution levels rose from 50 PPM to 70 PPM, indicating growing environmental pressure. The results of the one-sample t-test indicated that all four dimensions had mean values above the theoretical average (3), suggesting that residents generally perceived the Mosalla's impacts as significant. The physical (mean = 3.88) and environmental (mean = 3.87) dimensions showed the highest average scores, followed by social (3.66) and economic (3.64) dimensions. Interestingly, the social dimension demonstrated the highest t-value (4.45), suggesting strong perceived social effects despite slightly lower mean scores. Exploratory factor analysis extracted nine latent factors explaining 34.11% of the total variance. These factors were labeled as: (1) infrastructural and safety impacts, (2) environmental and economic impacts on neighborhood quality, (3) physical and employment effects, (4) infrastructural and service-related impacts, (5) combined economic–infrastructural impacts, (6) economic and social consequences on residence, (7) environmental impacts on quality of life, (8) economic and environmental development, and (9) economic transformations and welfare services. Pearson correlation analysis at a 99% confidence level revealed significant interrelationships among these factors. A strong positive correlation ($r = 0.68$) was found between economic development and residential consequences, indicating that increased commercial growth is associated with rising rents and demographic changes, potentially leading to displacement of long-term residents. Additionally, infrastructural expansion showed a significant positive correlation ($r = 0.55$) with environmental challenges, suggesting that physical improvements may simultaneously intensify traffic congestion, visual pollution, and noise levels. Conversely, employment growth demonstrated a strong correlation ($r = 0.74$) with improvements in welfare services, highlighting a positive link between job creation and social well-being.

Conclusion

The findings of this research indicate that the Grand Mosalla of Tehran has played a transformative role in shaping the spatial, economic, social, and environmental dynamics of the Abbas Abad neighborhood. The project has significantly improved infrastructure, expanded cultural and religious activities, increased employment opportunities, and enhanced economic vitality. At the same time, it has contributed to rising property prices, increased migration pressures, reduced green space per capita, and intensified environmental challenges. Local sustainable development in this context cannot be evaluated through a purely positive or negative lens. Instead, it reflects a complex interplay between growth-oriented drivers and quality-of-life considerations. The strong correlations identified between economic expansion and residential displacement, as well as between infrastructural growth and environmental degradation, highlight the need for integrated and balanced urban governance. Achieving sustainable development around the Mosalla requires policy interventions that mitigate environmental impacts, preserve green spaces, protect vulnerable residents from displacement, and ensure equitable distribution of economic benefits. Participatory planning, environmental management strategies, and social protection mechanisms are essential to reconcile economic dynamism with social stability and ecological resilience. Ultimately, this

study contributes to the broader discourse on urban megaprojects by offering a multidimensional analytical framework for assessing their local sustainability impacts. The approach developed here may serve as a model for evaluating similar large-scale religious, cultural, or infrastructural projects in other metropolitan contexts.

Declarations

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Authors' Contribution
Authors contributed equally to the conceptualization and writing of the article. All of the authors approved the content of the manuscript and agreed on all aspects of the work declaration of competing interest none.

Conflict of Interest
The authors declare no conflict of interest.

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