



Evaluation of effects of ecological parks on the urban environment (Case Study: Shahmanzar Hafeshjan Shahrekord)

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Abstract

Background and Objective: Environmental sustainability is a cornerstone of the United Nations' agenda for achieving sustainable urban development. Understanding the complex interplay between urban ecosystems and the natural environment is crucial for addressing contemporary urban environmental challenges. Rooted in ecological principles, the establishment of eco-parks plays a fundamental role in sustainable urban development by aiming to support the spiritual needs of citizens, protect biodiversity, and minimize human intervention in natural habitats. These spaces are also essential for enhancing urban environmental quality and fostering human-nature interaction. This study aims to identify the factors through which the Shahmanzar Eco-park influences the environment of Hafshejan city.

Methodology: This applied research employed a mixed-methods approach, utilizing library and documentary studies, field surveys, and interviews. The statistical population consisted of the residents of Hafshejan, from which a sample of 380 citizens was selected using random sampling. Data analysis was conducted using SPSS software, employing statistical tests including the t-test and multiple regression analysis.

Results and Findings: The evaluation results indicate that the Shahmanzar Eco-park has had the highest impact on the urban environment of Hafshejan in the "Environmental Index" (mean = 3.20) and the lowest impact in the "Economic Services Index" (mean = 1.80). Furthermore, the regression analysis revealed that the Environmental Index, with a coefficient of 0.029, has the most significant impact on the environmental quality and urban sustainability of Hafshejan.

Keywords: Eco-park, Environment, Shah Manzar Hafeshjan, Shahrekord..

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EXTENDED ABSTRACT

Introduction

Rapid urbanization and globalization have exacerbated various environmental challenges in modern cities, including the loss of natural spaces, increased air pollution, rising temperatures, and the degradation of biodiversity and overall quality of life. Within this context, eco-parks have emerged as a significant urban planning strategy to mitigate the adverse effects of urban development and to promote environmental sustainability. This study addresses these issues by assessing the specific impacts of the Shah Manzar Eco-Park on the environmental quality and urban sustainability of Hafshejan city. Urban parks and green spaces are recognized as urban ecological infrastructures that play a fundamental role in providing ecosystem services; these services include regulating local climate, improving air quality, reducing urban heat island effects, filtering pollutants, managing surface water runoff, and promoting the social well-being of residents. Ecoparks not only provide a recreational and lively space for citizens, but have also attracted the attention of researchers and urban planners as sustainable solutions to deal with the negative consequences of urban development. The contribution of metropolises to population growth and subsequent excessive energy consumption, environmental pollution and subsequent threat to non-renewable natural resources is undeniable. Therefore, the creation of eco-parks is important due to the increasing growth of urban environments and industrial developments to provide humans with natural environmental conditions in which recreational activities can be carried out while identifying how to deal with environmental issues. Therefore, paying attention to ecological projects is very necessary for the human society of the present era.

Methodology

This research is an applied study utilizing a mixed-methods approach, which includes both library-based documentary studies and field surveys supported by interviews. The statistical population comprised the residents of Hafshejan city, from which a sample of 380 individuals was selected using random sampling. The collected data were analyzed using SPSS software. Furthermore, to evaluate the impacts and test the research hypotheses, t-test and multiple regression analysis were employed. The present research method is applied in terms of purpose and, considering the nature of the goal and the means of achieving it, a descriptive and analytical method has been used. In this research, data have been collected through library and document studies including reliable scientific sources as well as field surveys and interviews. The research strategy is a combination of quantitative and qualitative methods, such that a questionnaire was randomly distributed among the residents of Hafeshjan city and also urban managers to collect the required information. 380 people responded to the questionnaire, 171 of whom were men and 209 were women. In order to collect the desired information and measure the research indicators, a researcher-made questionnaire was used. Spatial and geographical data were also processed and analyzed using ArcGIS software. SPSS and regression software were used for statistical analysis of the data. This comprehensive method allows for the presentation of reliable results that are relevant to the research objectives.

Results and Findings

The findings reveal that the Shah Manzar Eco-Park has had the most significant impact on the “Environmental Index” (mean = 3.20), while the “Economic Services Index” showed the lowest level of impact (mean = 1.80). The regression analysis confirmed that the Environmental Index, with a coefficient of 0.029, is the most significant factor affecting environmental quality and urban sustainability in Hafshejan city. In order to analyze and predict the components of the effects of ecoparks on the environment of Hafeshjan city and to identify the greatest impact of the components on environmental sustainability, the multivariate regression method has been used. As can be seen in the table below, components such as environmental quality, physical-functional, social services and economic services are independent variables and urban environment is the dependent variable, which these components act to explain environmental sustainability. According to the table below, the highest unit change in the standard deviation is related to the environmental quality component with a value of (0.039) and the lowest is related to the economic services variable with a value of (-0.183).

Conclusion

The results of the study showed that green organizational culture is the main foundation of ecological behavior in Ahvaz, and the indicators of "green learning" and "awareness of the micro-dust crisis" have the highest priority in the behavioral transformation of employees. Based on the Dematel and Supermatrix analysis, tangible symbols and managerial values are considered as causal factors, the main drivers of the formation of emotional commitments and innovative (deflective) behaviors in the organization. Also; the findings indicate that organizational pride and recognition of the depth of the environmental disaster have a much greater impact on improving ecological performance than external rewards or mandatory laws. Finally, success in ranking the factors affecting the green behavior of Ahvaz employees does not depend on coercion, but on specialized climate training and institutionalizing identity links with the organization's environmental goals.

Declarations

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Authors’ Contribution

The first author carried out the research and prepared the initial draft of the manuscript. The corresponding author (thesis supervisor) supervised the research process, provided methodological and scientific guidance, and critically revised the manuscript. All authors have read and approved the final version of the manuscript.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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