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ORIGINAL ARTICLE

Comparative Study of Quality of Life Indicators in Ahvaz City Regions

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EXTENDED A B S T R A C T

Introduction

Quality of life is a complex and multidimensional concept that encompasses both objective aspects, such as infrastructure and economic conditions, and subjective dimensions, including satisfaction and a sense of belonging. As cities constitute the primary living environments for contemporary populations, understanding the factors that influence urban quality of life is essential for enhancing residents' well-being. Identifying quality-of-life indicators enables urban planners to compare cities and formulate strategies to create more livable environments. Despite extensive research across multiple disciplines employing diverse methodologies, a comprehensive framework that simultaneously integrates physical, spatial, and social indicators has yet to be established. Quality of life is widely recognized as a key indicator of human development and urban competitiveness. Accurate measurement through the integration of quantitative and qualitative data plays a crucial role in identifying urban deficiencies, understanding citizens' priorities, and evaluating the effectiveness of urban policies. Ahvaz is one of Iran's major metropolises and the fourth largest city in the country. Approximately 32% of Khuzestan Province's population resides in Ahvaz, of whom nearly 35% live in peripheral and marginal areas. The city's high population density has generated significant challenges for urban life and the environment. In addition, sustained migration from rural areas and surrounding towns, combined with unplanned and uneven urban expansion, has adversely affected residents' quality of life. Investigating urban quality of life in Ahvaz can therefore contribute to more effective urban planning and management. Previous studies indicate that Ahvaz performs poorly in socio-cultural and demographic-economic indicators, while its infrastructure indicators are generally at a moderate level. Accordingly, this study seeks to answer the following question: What is the level of quality of life in each zoon of Ahvaz, and how do these zoons compare with one another?

Mothodology

The research was conducted in 2024 (1403 SH). Field data were collected through questionnaires distributed to 384 respondents, a sample size determined using Cochran's formula based on a total population of 1,184,788. Data analysis was carried out using SPSS software. To enhance the accuracy and reliability of the findings, data from the city's comprehensive plan were also used as supplementary sources. The

Shannon Entropy method was applied to determine indicator weights, and the Grey Relational Analysis (GRA) model was employed to rank the zoons and derive final conclusions. After reviewing a broad range of indicators, 15 were selected to ensure analytical precision. Finally, a quality-of-life map of Ahvaz's zoons was produced using ArcGIS software based on the model's results.

Findings

According to the model outcomes, Zoon 3 ranks highest in terms of quality of life among all zoons, although it still falls short of global standards in several indicators. This zoon performs particularly well in access to urban services and green spaces; however, its performance in religious facilities and housing quality is comparable to, or weaker than, that of Zoon 2. Despite its relatively favorable status, residents continue to express a need for improved access to recreational, educational, and security services.

Zoon 2 ranks second in overall quality of life and demonstrates strong performance in security and housing indicators, with a noticeable gap separating it from lower ranked zoons. While its infrastructure and green spaces are generally desirable, access to religious facilities remains limited, and residents express dissatisfaction with the condition of parks and recreational areas. In contrast, access to sports facilities, healthcare centers, and educational institutions is evaluated as satisfactory.

Zoon 4 occupies the third rank and shows comparatively strong performance in access to sports facilities, cultural centers, and healthcare services. Although the status of administrative offices, parks, and employment opportunities is similar to that of higher ranked zoons, the area faces notable challenges, including limited access to educational and recreational facilities and the highest level of waste generation among all zoons. Residents consider access to religious facilities, administrative offices, and healthcare centers acceptable, yet emphasize the need to improve green spaces, cultural facilities, fire stations, parks, and recreational centers.

Zoon 8 ranks fourth and exhibits strong performance in access to sports facilities, religious sites, and educational institutions, while suffering from deficiencies in cultural and administrative infrastructure. Residents generally view housing quality and healthcare services positively; however, they regard access to green spaces, fire stations, and recreational facilities as inadequate. This discrepancy between residents' perceptions and existing urban conditions highlights the need for targeted planning interventions to improve public services.

Zoon 1 is ranked lower overall. It performs well in access to religious facilities and police stations but records the highest level of waste production and exhibits weaknesses in green spaces and urban infrastructure. Although access to sports facilities and housing quality is considered satisfactory, residents express a clear need for improved access to cultural centers, fire stations, parks, and recreational facilities. The gap between current conditions and residents' expectations indicates an urgent need for strategic planning and service enhancement in this zoon.

Zoon 5 ranks among the lowest and faces serious challenges across most quality of life indicators. While access to green spaces and police services is evaluated as acceptable, access to sports, healthcare, educational, and recreational facilities is extremely limited. Residents rate housing quality and healthcare and educational services positively, yet express dissatisfaction with green spaces, cultural centers, parks, and recreational facilities. This contradiction between residents' perceptions and objective urban conditions requires special attention to the improvement of public infrastructure.

Zoon 6 ranks seventh and is characterized by an overall undesirable quality of life condition, possessing the least amount of green space and the fewest religious facilities in the city. Although access to cultural centers, fire stations, and housing quality is objectively poor, residents—contrary to existing conditions—tend to rate most indicators as satisfactory. This pronounced gap between residents' perceptions and infrastructural realities underscores the necessity of substantial interventions to enhance quality of life in this zoon.

Zoon 7 ranks last and experiences severe quality of life challenges. Although residents perceive access to green spaces, religious facilities, and healthcare services as

satisfactory, access to cultural, sports, educational, and recreational facilities is extremely limited. Moreover, high levels of waste production and low housing quality further exacerbate the district's problems. The discrepancy between residents' perceptions and existing conditions indicates an urgent need for comprehensive planning measures to improve urban infrastructure and services.

Discussion and Conclusion

Overall, the findings reveal that most zoons in Ahvaz exhibit a low level of quality of life when assessed against urban standards. The results also demonstrate a clear discrepancy between documented data and residents' perceptions. For example, in the zoon 6 residents perceive quality of life as acceptable, while empirical data indicate significant deficiencies. Conversely, in the zoon 2 objective conditions are comparatively better, yet residents express lower levels of satisfaction. These differences can be attributed to rapid urbanization and the uneven spatial distribution of urban services. The findings are consistent with Takano's study, which emphasizes the influential role of subjective preferences in shaping perceptions of quality of life.

K E Y W O R D S

Quality of life, Grey Relational Analysis, Entropy, Ahvaz.

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