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Evaluation and assessment of the level of citizens' satisfaction and perception of the principle of pedestrian-oriented new urbanism in the city of Ahvaz

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Abstract

Background and Objective: Walking, as one of the most important forms of sustainable transportation, has wide-ranging positive impacts across economic, social, environmental, and individual dimensions. In contemporary urban planning literature, it is considered a fundamental priority and, at the same time, a missing link in urban development. Pedestrian pathways, as some of the most significant urban public spaces, serve various functions, including leisure activities, daily shopping, social interactions, everyday encounters, environmental perception, strengthening place identity, and enhancing safety, security, vitality, and urban livability. In this context, the central fabric of the city of Ahvaz faces challenges such as narrow and irregular streets, weak urban infrastructure, fine-grained land parcels, decline in the function of local centers, shortage of service land uses, physical deterioration, increased traffic and noise pollution, as well as insufficient attention to pedestrian-oriented and green spaces. These conditions further highlight the necessity of urban regeneration and improving the quality of urban spaces.

Methodology: The research method, considering its theoretical–applied objective, is descriptive–analytical in nature. The required data were collected through both field and documentary methods. This study aims to evaluate citizens' satisfaction with pedestrian spaces in the city of Ahvaz. The statistical population includes residents, shopkeepers, and users of the study area, and the sample size was determined using the Krejcie and Morgan method. Data were analyzed using SPSS software and the Friedman test.

Results and Findings: The results indicate that the physical dimension plays the most significant role in citizens'satisfaction, followed by social, economic, and finally environmental dimensions. Overall, the findings suggest that improving the quality of supporting spaces can effectively enhance citizens' satisfaction and improve the performance of pedestrian networks in the central fabric of Ahvaz. Considering the importance of the physical dimension in increasing citizens' satisfaction, it is suggested that in future pedestrianization projects, special attention be paid to the quality of façade design, urban furniture, lighting, and the improvement of urban edges, in order to enhance the visual and functional attractiveness of the space. Given the relatively favorable level of citizen satisfaction with the social dimension, it is recommended that planning for the organization of cultural, artistic, and social events along this corridor be increased, so as to strengthen social interactions and citizens' sense of belonging.

Keywords: Public spaces, pedestrian pathways, physical, environmental, economic, social, Ahvaz.

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Extended Abstract

Introduction:

Walking is considered the most fundamental mode of human mobility and has extensive effects on improving physical and mental health as well as overall well-being. This mode of movement within urban spaces plays a significant role in shaping citizens' lived experiences and their perception of the environment. Walkability, as one of the key indicators for assessing urban environmental quality, reflects a space's capacity to support pedestrian movement and is regarded as one of the most important components in achieving livable cities and urban sustainability.

Conversely, walking as a form of sustainable transportation has positive economic, social, environmental, and individual impacts, and in contemporary urban planning literature, it is considered a fundamental priority and, at the same time, one of the missing links in urban development. Pedestrian pathways are among the most important urban public spaces, providing functions such as leisure activities, daily shopping, social interactions, environmental perception, place-making, memorability, and the enhancement of urban safety and security.

n the central fabric of the city of Ahvaz, particularly within the Salman Farsi Street area, despite its high physical and functional capacities, numerous problems are evident, including inadequate pathways, a shortage of desirable public spaces, weakness in pedestrian-oriented infrastructure, and a decline in the quality of the urban environment. These conditions have led to the existing pedestrian network being unable to fully fulfill its role in enhancing the quality of urban life.

On the other hand, despite the importance of supporting spaces in strengthening the pedestrian network, the level of efficiency and performance of these spaces has received less attention from the users' perspective. This is while evaluating citizens' experiences and satisfaction can play a significant role in identifying weaknesses and providing improvement strategies.

In this regard, evaluating the performance of these spaces from the users' perspective makes it possible to identify existing potentials and deficiencies and to propose corrective solutions. Therefore, assessing the performance of supporting spaces within the pedestrian network in the central fabric of Salman Farsi Street in Ahvaz constitutes the main objective of the present study.

Accordingly, the main research question is to what extent the performance of supporting spaces within the pedestrian network in the central fabric of Ahvaz has contributed to improving the quality, attractiveness, and efficiency of the pedestrian network, and to what degree it has generated satisfaction and responsiveness from the users' perspective.

Methodology:

The present study employs a descriptive–analytical research design, and both documentary and survey methods are used for data collection. In terms of purpose, the study falls within cognitive research, and regarding the nature of the data, it is considered a mixed-methods (quantitative–qualitative) study. The data collection instrument is a questionnaire.

The statistical population of the study includes shopkeepers and residents of Salman Farsi Street, as well as non-resident citizens. The sampling method is random, and the sample size is set at 100 individuals. In selecting the sample, an occupational approach was considered rather than gender-based classification; accordingly, the statistical population was divided into two groups: "shopkeepers and residents" and "pedestrians." The age range of respondents is between 20 and 65 years, and their educational levels vary from primary school to master's

degree. The collected data were analyzed using SPSS statistical software and through both parametric and non-parametric tests, including correlation, Friedman test, Chi-square test, fuzzy analytic hierarchy process (FAHP), and T-test.

One of the technical features of measurement instruments is reliability. This concept indicates the extent to which a measurement tool produces stable and consistent results under the same conditions. The reliability coefficient shows how accurately the instrument measures stable or variable characteristics of the respondents. This method is used to assess the internal consistency of measurement tools such as questionnaires or tests that measure multiple attributes. In such instruments, each question may take different numerical values. To calculate Cronbach's alpha coefficient, it is first necessary to compute the variance of each subset of questionnaire items and the total variance.

Results and Discussion:

According to the results of the T-test, the actual mean in the physical dimension is 58.5, which is higher than the assumed mean. The test difference between these two is 2.30, indicating that residents and users of this pedestrian route have a moderate level of satisfaction in terms of the physical dimension. In this dimension, items such as land-use compatibility with the pedestrian route, the state of economic vitality, access to public transportation, availability of parking, suitability of pavement materials and colors, appropriate lighting conditions, provision of shading, and the width of the pedestrian path were examined.

In the social dimension analysis using the T-test, variables such as individuals' willingness to participate in events along the pedestrian route, willingness to support the establishment of this route, participation of residents and shopkeepers in its development, levels of disturbances and conflicts along the axis, vitality of the route, and access to public services were investigated. In this section, the actual mean is 22.301, and the difference from the assumed mean is 2015.

Given the establishment of this pedestrian route, the functions of existing units along it are highly diverse, so that most of the existing functions meet the daily needs of residents. As a result, these factors collectively attract a large number of citizens and residents to the area on a daily basis.

The indicators examined in the economic dimension included the impact of pedestrianization on increasing shopkeepers' sales, its effect on revitalizing abandoned land uses and job creation, the increase in property prices following pedestrianization, the diversity of existing land uses, and the level of financial participation of shopkeepers in the development of the pedestrian route.

In the environmental dimension, several indicators were considered which appear to have the greatest impact on citizens' dissatisfaction. The most important of these include the lack of green space and preservation of the natural characteristics of the pedestrian axis, as well as the presence of poultry and livestock markets on streets adjacent to the pedestrian route.

Conclusion:

Based on the analysis of the questionnaires used in this study, the results indicate that the physical dimension and the nature of the project are the most important factors influencing citizens' satisfaction with the pedestrianization of Salman Farsi Street. Overall, considering the condition of Salman Farsi Street prior to the implementation of the pedestrianization project—when it functioned as a highly congested street with heavy vehicular traffic—the implementation of the pedestrianization scheme and the removal of vehicular traffic were welcomed by the majority of citizens. However, the implementation of the project has not been free of problems and issues.

The social dimension ranks second in terms of citizens' satisfaction with the axis. The findings in this regard show that the creation of a safe, walkable space with strong social interactions is highly appreciated by the majority of citizens.

The economic dimension was examined from two perspectives: first, from the citizens' viewpoint, where most land uses are commercial and serve the diverse needs of residents; and second, from the perspective of shopkeepers, for whom the pedestrianization project has led to increased pedestrian flow, resulting in greater economic vitality and an increase in shop prices.

The environmental dimension indicates insufficient satisfaction among citizens regarding environmental conditions. The lack of noticeable green space, as well as the presence of poultry and livestock markets in close proximity to Salman Farsi Street, has contributed to this dissatisfaction.

Given the importance of the physical dimension in increasing citizens' satisfaction, it is recommended that future pedestrianization projects pay special attention to the quality of façade design, urban furniture, lighting, and the improvement of building edges in order to enhance the visual and functional attractiveness of the space.

Considering the relatively satisfactory level of social satisfaction, it is suggested that planning for cultural, artistic, and social events along this axis be increased in order to strengthen social interactions and citizens' sense of belonging.

From an economic perspective, it is recommended that municipal authorities support shopkeepers' economic stability through supportive mechanisms such as financial facilities, rent management, and land-use regulation.

Regarding environmental conditions, due to citizens' dissatisfaction, it is recommended that increasing green spaces, planting climate-appropriate trees, and introducing natural elements along the axis be prioritized. It is also suggested that in order to mitigate the negative impacts of incompatible land uses (such as poultry and livestock markets near the axis), the relocation or reorganization of these activities be considered to improve environmental and sanitary quality.

Finally, it is recommended that periodic evaluations from citizens' perspectives be conducted after the implementation of pedestrianization projects in order to continuously identify strengths and weaknesses and improve the quality of the projects over time.

Declarations

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•**Conflict of Interest:** The authors declare no conflict of interest.

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