Influence of Urban Development Projects on Micro and Macro Urban Spatial Structure, Using Space Syntax (Case Study: Zanjan Zainabiyeh Axis)

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Expanded Abstract

Introduction

One of the important issues in the context of central and physical intervention is on the framework and skeleton of the streets of the main cities, where these actions are carried out only by the goals of the traffic. Studies show that according to physical space, to revitalize the tissues of cities regardless of the social logic of urban spaces give rise to further isolation of the physical and the subsequent economic - socio links. On the other hand, Space Syntax theory holds that urban spaces have social relationships and social goals for the relationship between urban spaces. In order to understand the relationship between urban spaces, we can understand the behavioral patterns using qualitative and quantitative analysis. This theory believes that the main cause of urban spatial configuration is composition of socio-economic pattern and movement in the city.

One of the important development plans within the context of the urban planing is the planning for Zainabiyeh. The project was carried out with the aims of traffic in the center of the city to study the impacts of the project on urban spatial structure and organization. The plan on the scale of the neighborhood was assessed in two periods: before and after the program by Space Syntax.

Methodology

The methods used in this research are created by an analytical – descriptive methodology. Accordingly, the spatial parameters of the theory of space syntax are referred to in two periods: before and after the program in two small-scale Zainabiyeh (local) and macro (city) in terms of urban spatial configuration analysis and evaluation. According to this theory, the structural model is calculated by graph theory. In the present study, the parameters to include integration (global and local), connection, depth, and resolution are controlled. We used Ucl Depthmap version 10 software for analysis of the data.

Results and discussion

In the section, the research findings were agrued in 2 sections including Part I: analysis of the variation of the combined parameters at the Zainibieh neighborhood level. The results initially

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obtained from the mean analysis of parameters at the Zainibieh neighborhood level before and after the implementation of the pedestrian and rider roadmap were extracted using the Depth map software The average of parameters in expressing the overall status of the parameters is the key value in the analysis of the space syntax indices; therefore, according to the data in Table 1 and Figures 1 and 2, we can say that the mean integrations in the Zainibieh neighborhood after the implementation of the plan for walking and riding (1.302 and 1.424) has increased, The maximum increase in ride access after the implementation of the plan has meant that the Zainibieh access plan has increased for pedestrians and rides, and is particularly well placed for riders with the highest degree of integration. As already mentioned, there is an inverse relationship with integration. Hence, it is reasonable to reduce the depth after the implementation of the project for pedestrian and riding, as the number of routes or the number of directions to reach the most integration line (Zainabiyeh and Saadi axis). However, the control indicator in fact represents the degree of legibility of the network. Thus, the accuracy of the data in the control table after the implementation of the plan in the neighborhood has increased; because the number of choices to reach the desired points has increased. This property is specific to chess patterns.

In the second step, the difference in integration was also assessed to determine the impact of the plan on spatial isolation at the Zainabiyeh neighborhood.

Part II: Assessing the Effects of Zainabiyeh plan on urban spatial structure. This part of the project evaluated Zainabiyeh in the spatial structure of the city. For this purpose, the integration maps of the periods were prepared and analyzed in Depth map software. Data are presented on two main axes (axes Imam and Sadi) in table format at the continuing influence of this project on the structure of the city. This is carried out based on the same data.

Zainabiyeh project can influence the overall structure of the city. The projects addressed two impacts including:

1- Change Rank integration impact on the main axes before and after the project; 2- Impact on urban development, 3- The impact on user change and increase in the value of the property, 4- The impact on network performance, 5- Effects on the amount of traffic.

Conclusion

Old tissues of cities, as part of the whole urban system, are now the most important problems for the planning and management. New developments in the world in urbanization and the emergence of problems is caused by the old sections of cities more than other parts exposed to adverse effects of urban development. In the city of zanjan, there are also plans to organize a design based Zainabiyeh as one of the objectives of traffic. This is regardless of the social logic of space and spatial relations, spatial structure and organization. The new problems that until now remained out of sight designers and urban planners are created. Therefore, this study examined the impact of Zainabiyeh based on macro and micro structure of the city. This requires the use of a smart way to be able to analyze spatial relationships. Thus, using space syntax as a new approach in studies and modeling of spatial structure for answering research was conducted in two parts.

The results showed that the impact of the project in the neighborhood scale, although can initially increase the amount of integration, this has led to an increase in the difference in isolation of break physical space in the neighborhood. At the macro level with the slightest variation in the integration of large changes in the spatial arrangement and displacement rank integration between the main axes have been followed. In the sample, Zainabiyeh's design for urban development, property value, land use, pedestrian movement, and traffic situation of the road network has also been affected.

Keywords: development plans, spatial structure, social logic of space, space syntax.

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