

# THE EFFECTS OF METRO STATIONS ON NEIGHBORHOOD SUSTAINABILITY

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(Received 21 April 2010, Accepted 22 May 2010)

Neighborhood is almost the smallest comprising unit within the hierarchy of urban structure. Any neighborhood is unique and self-sustained social, physical and functional entity. The neighborhood can thus be defined as a physical entity of specific dimensions, as a grouping of a certain number of units or people, or as an area differentiated by social, cultural or historical factors. Introduction of new transportation systems could have strengthening or weakening effect on neighborhoods. In the past, new urban streets and highways have weakened the traditional neighborhoods of Iranian cities. Introduction of metro system to the city and establishment of its stations is a phenomenon which could have a positive or negative effect on neighborhood integration. The aim of the present research is to study the effects of metro stations on the social dimensions of a sustainable Iranian neighborhood. It focuses on the effects of metro stations on the social changes within the adjacent neighborhoods. Therefore a field study approach is undertaken in which a questionnaire is used to measure the social issues and changes within neighborhood and residential satisfaction levels as a result around metro stations. The neighborhood adjacent to two metro stations of Sharif University and Iran University of Science and Technology are selected as the case studies. The technique used is a structured questionnaire, with 160 respondents participating in the survey. Major issues of study included the effect of establishment of metro stations on social transformation of neighborhood, preferences for the neighborhood after introduction of the stations, the effect of metro station on presence in neighborhood space, the effects of metro station on

day and night security levels, social control on neighborhood space, acceptance of non-locals presence in neighborhood space and the effects of metro stations on presence of unwanted groups. The data was processed using SPSS package. Descriptive and analytic statistics were used and for correlation study, considering the rank order data type, the Gamma Statistics and Chi square tables were used. The results shows that personal characteristics have a significant relation with level of satisfaction of residing within the neighborhood after establishment of metro and also the improvement in social changes within the neighborhood. Among these characteristics gender, age and occupation show a stronger correlation with "neighborhood residential satisfaction level" and at a lower significance level education and length of residence also show correlations with this dependent variable. Also the results show that most of these variables are effective on positive social changes in the neighborhood. It shows that the establishment of metro stations has significant effect on the social characteristics of the neighborhood adjacent to metro stations, and has resulted in weakening the social sustainability and neighborhood identity, while increasing the presence of non-locals and unwanted groups. It is concluded that the potential for using the metro stations as a new neighborhood center and its potential for integrating the neighborhood is not fully benefited from. This is mainly due to the lack of a proper planning and design in the area adjacent to metro stations.

**KEYWORDS:** Metro Station, Neighborhood, Sustainable Neighborhood, Social Characteristics