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کاربرگ شماره‌ی ج-پانزده



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مدیر تحصیلات تکمیلی

English Abstract Worksheet for Doctoral Thesis

IN THE NAME OF GOD

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Abstract: Realizing the structural characteristics of the urban street network has a crucial role in understanding dynamic and transforming events in a city. One of the most effective structural characteristics of street network is street network centrality which regarding former studies has a substantial effect on some events namely, distribution of activities along streets especially commercial and service activities that have a significant effect on the formation of motorized and pedestrian traffic flow throughout the city. Therefore, considering street network centrality strongly improves the outcomings of urban land use and traffic planning. The current thesis aims at explaining the relationship between street network layout and location selection of commercial and service activities, from the point of view of street network centrality, at two scales of the whole city and local morphological areas. Street network centrality of Qom city is modeled using Multiple Centrality Assessment (MCA) method in terms of centrality indices of betweenness as well as global and local closeness. At city scale, the spatial correlation between indices of street network centrality and location selection of activities is calculated using Pearson's correlation coefficient as well as spatial correlation index (SCI) which defined by the authors. At the local scale, the relationship between street network layout and location selection of commercial and service activities is investigated using correlation matrix, cluster analysis and Lorenz curve. Results indicate that there is a direct and high correlation between the selected street centrality indices and location selection of commercial and service activities in Qom. The highest correlation coefficients are for local closeness and betweenness centrality indices respectively. Therefore, street network centrality has a significant effect on the location selection of commercial and service activities in Qom city; the activities choose locations with better network centrality. Findings at local scale show that only 3 out of 10 chosen indicators of street layout pattern - all three are the indicators of street network centerline - have a significant correlation with average	

local closeness centrality index; therefore, mentioned average centrality index has no significant correlation with block indicators. Correlation matrix indicates that average local closeness centrality index increases when street network length at local fabric area or the number of three-way intersections increase, and consequently, there is a more centralized fabric at the scale of pedestrian accessibility.

SIGNITURE OF SUPERVISOR