

Relation between Urban Traffic Accidents and Urban Structures from Spatial Perspective: A Case Study of Tehran City, Iran



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Introduction and Problem Statements

Rapid urban growth is becoming a serious problem in Tehran City. Tehran stands out as a vibrant metropolitan area, facing uncontrolled urban expansion and population growth which caused huge number of urban traffic accidents. Urban structure is an important factor which has a direct effect on the number and kind of the accident. In order to solve the problem mentioned in the above, spatial corresponding between accident and city structure is important for future planning and accident prediction.



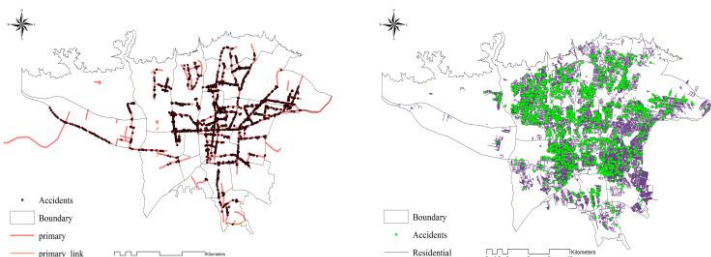
Tehran Urban Development

Large number of urban accidents especially fatal and injured accidents has resulted from a high population growth rate and more usage of car in more complex transportation network and rapid urban growth with a strong tradition of centralization of government activities focussed in the capital.



Results

The work has presented the probability of an accident at different locations in the road network. It was found that highway and freeway, residential and secondary road types have the highest possibility of an accident.



Objective

To investigate spatial relationships between traffic accidents and urban structures through spatial analysis

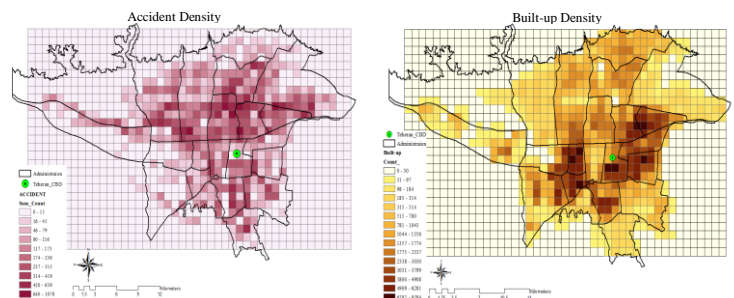
Tentatively Input Data and Source

Many different data have been used in this study. Table shows some of the most important of them.

Data Type	Source
Accident Data Base	The Police Department of Iran, Tehran
Population Data	The Statistic Organization of Iran, Tehran
Land Use Data	Google Earth and Geodigitizing Data
Socioeconomic Data	The Statistic Organization of Iran, Tehran

Results

Urbanized, more densely populated areas, with few numbers of highways and freeway and traffic limitation zone will tend to have fewer dangerous accidents, particularly while areas with higher employment density and more highways and freeways have more traffic casualties.



Conclusions

- The work has presented the probability of an accident at different locations in the road network. It was found that highway and freeway, residential and secondary road types have the highest possibility of an accident.
- Land use category, urban dense and increased road length was associated with increased serious injuries, especially for highways, which were also associated with increased slight injuries.
- During the rush hour of the congestion, posted speed limits and are often believed to have little effect on driving speed, except during the build-up of queues and their later dispersion.