

Improve Safety Performance of Un-Signalized Intersections in Oman

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Abstract : The main objective of this paper is to provide a new methodology for road safety assessment in Oman through the development of suitable accident prediction models. GLM technique with Poisson or NBR using SAS package was carried out to develop these models. The paper utilized the accidents data of 31 un-signalized T-intersections during three years. Five goodness-of-fit measures were used to assess the overall quality of the developed models. Two types of models were developed separately; the flow-based models including only traffic exposure functions, and the full models containing both exposure functions and other significant geometry and traffic variables. The results show that, traffic exposure functions produced much better fit to the accident data. The most effective geometric variables were major-road mean speed, minor-road 85th percentile speed, major-road lane width, distance to the nearest junction, and right-turn curb radius. The developed models can be used for intersection treatment or upgrading and specify the appropriate design parameters of T- intersections. Finally, the models presented in this thesis reflect the intersection conditions in Oman and could represent the typical conditions in several countries in the middle east area, especially gulf countries.

Keywords : accidents prediction models (APMs), generalized linear model (GLM), T-intersections, Oman

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