

I. RESEARCH PROJECT TITLE

Factors Affecting Fatal Crash Involvement of Older Drivers

II. RESEARCH PROBLEM STATEMENT

It is a well known fact that the percentage of elderly among the US population is increasing. The majority of elderly are dependent on automobiles for their transportation needs either because of lack of public transportation or by choice. However, as a result of the natural aging process, they experience decreased mental and physical capabilities compared to younger drivers. This situation combined with imperfect highway infrastructure is making older drivers one of the most critical special population groups in terms of highway safety. Mobility and transportation needs of elderly in rural areas could be even more challenging due to the nature of the problems in those areas.

On per mile driven basis older drivers experience the highest crash involvement of any driver age group. In addition, elderly are more likely to be killed or severely injured when involved in motor vehicle crashes. Understanding the causes and situations under which older drivers are more likely to get involved in crashes and to be fatally or more severely injured will help towards improving the overall highway safety situation of older drivers. With that kind of knowledge, potentially more specific countermeasures could be suggested for improving highway safety of the aging population in Kansas. Even though some national level studies are available on older drivers, preliminary investigation has indicated that older drivers in Kansas experience different sets of challenges than the average US older driver, mainly because of the disproportionate amount of rural highway mileage.

Currently Kansas State University is working on a research project funded by the Kansas Department of Transportation (KDOT) to look into the general highway safety issues of older drivers. That study utilizes the electronic crash database maintained by KDOT to gather data related to older driver related crashes in Kansas. Even though this is a reasonable approach to study the broader aspects of the problem, some very detailed information are lost when they are transformed into the electronic format. Examples of such details include the description on how the crash might have happened and the sketch provided in the actual police accident report. In order to get a deeper understanding of the contributing causes of crashes involving older drivers, it is necessary to pay closer attention to each and every crash which resulted in high levels of injury severity.

III. RESEARCH OBJECTIVES

The main objectives of this study are to identify characteristics of fatal older driver crashes in Kansas and associated highway safety issues with the intention of suggesting potential countermeasures for improving safety of older drivers.

The following major tasks will be completed in accomplishing the above objectives.

Task 1: Literature Review

Conduct a detailed literature review on recent older driver related studies conducted throughout the country.

Task 2: Gather Crash Data

Collect or extract all data related to older driver involved fatal crashes. Hard copies of the crashes involving older drivers will be collected for a reasonably long period of time to have a sufficiently large sample of fatal crashes. In addition, an effort will be made to see whether any exposure data (ex. average trips per older driver, average distance of a trip etc.) is available for older drivers. Sources such as Nationwide Personal Transportation Survey or similar will be investigated in this regard. In addition to the data available in the database, more information from the police reports will be gathered to make a better, more accurate analysis.

Task 3: Data Analysis

Analyze the data collected to identify potential problem locations in which older drivers are more likely to be involved in fatal crashes. Comparisons will be made between different types of fatal older driver crashes to better identify the problem areas. For example, characteristics of rural crashes will be compared those in urban areas and single vehicle crashes will be compared with multi-vehicle ones, etc. Specific maneuvers and other characteristics that are overly represented in fatal older driver involved crashes will also be identified. Statistical models will be developed to identify the factors that could reduce fatal crashes involving older drivers.

Task 4: Recommendation of Potential Countermeasures

Based on the knowledge gathered through the above tasks, develop appropriate recommendations to improve safety of older drivers and reduce fatalities.

Task 5: Report Preparation

Document all the tasks of the project in a final report.

IV. ESTIMATE OF FUNDING AND RESEARCH PERIOD

Research Period: 18 months from the beginning of the project.

Funding: Estimated project cost is \$ 75,000.

V. URGENCY AND POTENTIAL PAYOFF

Maintaining the mobility and transportation needs of elderly is a responsibility of every citizen and safety is one of the most crucial issues in doing that. When considering the extremely high economic costs associated with fatal crashes, this project is expected to

have a very high payoff potential. Additionally, this proposed project matches well with one of the focus areas of the University Transportation Center at the Kansas State University.

VI. IMPLEMENTATION STRATEGY

Based on the findings, the project will provide recommendations for improving highway safety of older drivers.

VII. PROJECT PERSONNEL

The principal investigator of this project will be Dr. Sunanda Dissanayake (Assistant Professor in Civil Engineering) who has many years of experience in the areas of traffic engineering, safety, crash data analysis and access management related issues. One Graduate Research Assistant will work on this project whose PhD dissertation will be focused on this study. Every effort will be made to recruit a qualified female and/or minority student to work on this project.

VIII. SUBMISSION INFORMATION

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