

SØK 3001 Take home exam (40%)

1. What is the causal effect of seatbelt usage on traffic fatalities?

Policymakers around the world are concerned about the number of traffic fatalities and it is often argued that use of seatbelts reduces the number of fatalities and serious injuries. Based on this, governments have instituted mandatory seat belt laws to reduce the number of fatalities and injuries. In this exam you are asked to investigate the causal relationship between traffic fatalities and seatbelt usage. To do this investigation you are given an enclosed dataset **takehome-exam-V2022.dta** that includes a set of variables for a sample of 50 US states plus the District of Columbia for the years 1983-1997. The data set contains data on traffic fatalities, seatbelt usage and enforcement of seatbelt laws in the states along with other state characteristics. If you have technical problems with downloading the data file in Inspera, the data file can also be found on the course site on Blackboard.

The variables in the data file are:

| | |
|----------------------|---|
| <i>fatalityrate</i> | Number of fatalities per million of traffic miles in the state in a year |
| <i>sb_usage</i> | Seat belt usage rate in the state |
| <i>speed65</i> | Binary variable for 65 mile per hour speed limit in the state |
| <i>speed70</i> | Binary variable for 70 or higher mile per hour speed limit in the state |
| <i>ba08</i> | Binary variable for a blood alcohol limit $\leq .08\%$ in the state (drink-drive limit) |
| <i>drinkingage21</i> | Binary variable for age 21 as the minimum legal alcohol drinking age in the state |
| <i>income</i> | Per capita income in the state |
| <i>age</i> | Mean age in the state |
| <i>primary</i> | Binary variable for primary enforcement of seat belt laws (Police officer can stop a car and ticket the driver if the officer observes an occupant not wearing a seat belt) |
| <i>secondary</i> | Binary variable for secondary enforcement of seat belt laws (Police officer can write a ticket if an occupant is not wearing a seat belt, but must have another reason to stop the car) |
| <i>vmt</i> | Millions of traffic miles per year. (Note: Number of fatalities = $fatalityrate \times vmt$) |
| <i>state</i> | State |
| <i>year</i> | Year |
| <i>fips</i> | State ID Code |

2. Additional instructions.

You should submit your paper in a **single PDF file no later than the deadline announced in Inspira. Please add a copy of your do-file** at the end of your paper.

You can submit your work in groups of up to 4 students.

You have no limit on the length of the paper, but as a rough guide it is likely that you will need around 3000 words to complete the assignment. Shorter assignments could still receive good marks. In other words, you should not worry about the length of your paper and rather focus on the clarity of your writing, appropriateness of the empirical methods chosen and critical assessment of your arguments. Your paper is expected to follow the structure of an empirical analysis as informed in lectures and earlier information on blackboard during the course.