Title: Midfield-width, lane width and effects on speed and mental workload: A simulator study

Truls Vaa¹, Pål Ulleberg²

Authors: ¹Institute of Transport Economics, ²University of Oslo, Institute of Psychology

Email: tva@toi.no, pal.ulleberg@psykologi.uio.no

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The paper will present results from a simulator study where 36 subjects were exposed to 12 randomly ordered conditions - each condition comprising the same 10 km stretch of road with constant speed limit (90 km/h). Midfield- and driving lane width were systematically varied in a 3x3 factorial within-subjects design. All subjects had their own "private rules" regarding choice of driving speeds on rural 2-lane roads with a speed limit of 90 kmh. An example of private rule: "In 90 km/h speed limit zones I drive approx 100 km/h". All subjects were asked of these rules after the simulator sessions. When the actual driving speeds in the simulator were checked against their private rules, the speeds that were chosen were in remarkable agreement with their rules of driving speed choices. Drivers choosing the lower levels of driving speeds showed practically no variation in average speeds across the experimental conditions, while the group stating that they usually would drive 110-120 kmh in a 90-zone, varied across experimental conditions by having their highest mean speeds when midfield was narrow and driving lane was wide and lowest mean speed when midfield was wide and driving lane narrow. The maximum speeds of this subgroup was also significantly higher than speeds of the rest of the drivers. The driving speeds seem to be determined partly by "private rules", partly by emotions as measured by skin conductance (SCR).