A STUDY ON VEHICLE FUEL CONSUMPTION IN VARIOUS DRIVING CONDITION AND DRIVING MODE

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ABSTRACT

Various economic driving attitude and self-recognition for economic echo driving for drivers has been carried out for long time in Korea. So it has been much reduction in vehicle fuel consumption for echo driving in empirically. But there was no research about drivers’ attitude and behavior in micro level; in example, what is the vehicle operation step with high fuel consumption from start point to destination.

This study has conducted field test for vehicle fuel consumption with subjects in roundabout and analyzed accidents occurred in roundabout, Korea. Also it was given to subject the questionnaire about her economic driving attitude and self-recognition for economic echo driving. The subject was 88 peoples with driving license and aged between 23 and 68 years old. They were paid some money to attend the research test. The test sections for roundabout were 7 sites. The test vehicles were ten vehicles and driving length with subject were 2.6km and subject drive the two times in test section. It takes about six minutes per one subject.

In results, removed the data with one novice driver in test and four break away drivers from test driving course, Average speed after 5 seconds was 21.73km/h and engine speed was 1957.82 rpm, fuel consumption was 28.22 cc per sec. Male and younger drivers had no economic echo driving with high fuel consumption than female and old drivers.

Average stop speed before 5 seconds was 25.65km/h and engine speed was 842.59 rpm, fuel consumption was 6.13 cc per sec. There was no significant difference in sex, age in economic echo driving with fuel consumption. For stopped vehicle, no significant difference in sex, age in economic echo driving with fuel consumption, engine speed was 697.10 rpm, fuel consumption was 6.18 cc per sec and there were no subjects to leave the car in neutral, turn off starting.

Consequently, male and young drivers have high economic driving attitude and self-recognition for economic echo driving than female and old drivers. But economic echo driving attitude and echo driving percentage for female drivers was statistically significant than male drivers.

There was no evidence between drivers’ economic driving attitude and self-recognition for economic echo driving and real field driving. This research result shows new hypothesis about drivers’ cognitive mismatch. This research results can use for drivers’ education material and material for public relations.