



5th conference

Transport Solutions:
from Research to Deployment

Innovate Mobility, Mobilise Innovation!

Paris - La Défense CNIT, 14 - 17 April 2014



Attitudes of Greek drivers towards mobile phone use while driving

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Objectives of the study



- Investigate the attitudes of Greek car drivers
- Find patterns in the data
- Create groups according to attitudes
- Focus on mobile phone use while driving

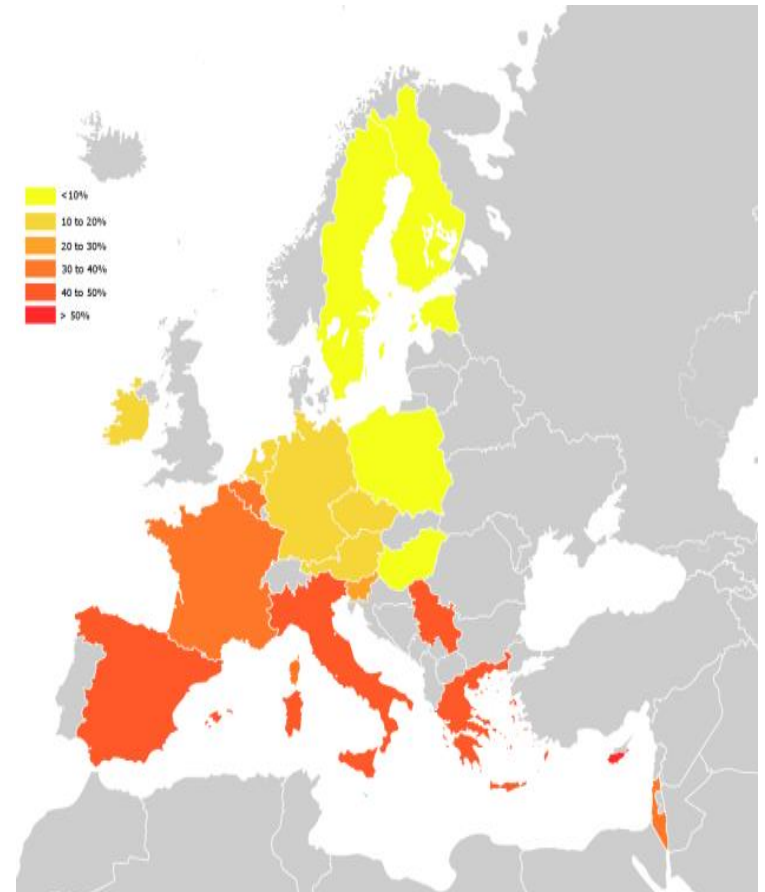




- Previous findings
 - Mobile phone use while driving is considered as a dangerous activity
 - However, a large proportion of drivers use the mobile phone while driving
 - Those drivers are prone to aggressive driving
- Limitations
 - Further research is needed by means of a national sample



- SARTRE-4 survey
 - 19 countries
 - 21,280 respondents
 - Extensive questionnaire
- Greek sample
 - 1,000 respondents
 - 602 drivers





- Factor analysis
 - Understanding the structure of a large set of variables
 - Grouping parameters reflecting drivers' attitudes
 - Reducing the dataset to a more manageable size
 - Minimize loss of information
- Cluster analysis
 - Group drivers into meaningful groups (clusters) on the basis of attitudes

- Factor analysis
 - 21 initial variables
 - 7 produced factors
 - 64% of information is retained
 - Factor score is calculated

Simpson-Kegel: $\pi(q, \lambda) = S(\lambda) - hq B(\lambda)$

$$S(\lambda) = \lambda^2 - 1, \lambda_{1,2} = \pm 1$$

$$B(\lambda) = \frac{1}{3}(\lambda^2 + 4\lambda + 1) \Rightarrow \pi(q, \lambda) = (1 - \frac{1}{3}hq)\lambda^2 - \frac{4}{3}hq\lambda - 1$$

↓ (hq → 0)

Ausatz: $\lambda_1(hq) = -1 + \frac{1}{3}hq + O(hq^2)$

$\lambda_2(hq) = -1 + \frac{2}{3}hq + O(hq^2)$

Einsatz in $\pi(q, \lambda_{1,2}) = 0$ → Summe v. Koeffizienten

$$\Rightarrow \lambda_1(hq) = \boxed{-1 + \frac{1}{3}hq + O(hq^2)}$$

$$\lambda_2(hq) = \boxed{-1 + \frac{2}{3}hq + O(hq^2)}$$

$\Rightarrow Y_1 = 1, Y_2 = \frac{1}{3}$

$Re q < 0 \Rightarrow -1 + hq \in \text{Kreis} \Rightarrow |1 + hq| < 1$

$-1 + \frac{1}{3}hq \in \text{Kreis} \Rightarrow |1 + \frac{1}{3}hq| < 1$

$S_6 \subset \dots$

$A(x)$ -stabil



- Summary of factors
 - **Factor 1:** Level of safety in Greece, perception of other drivers' speeding above speed limits
 - **Factor 2:** Mobile phone use, driving above speed limits, driving through amber light
 - **Factor 3:** Attitudes towards road safety measures and penalties (e.g. phone use, speeding offences)
 - **Factor 4:** Past accident involvement, fatigue driving, probability of speed checking

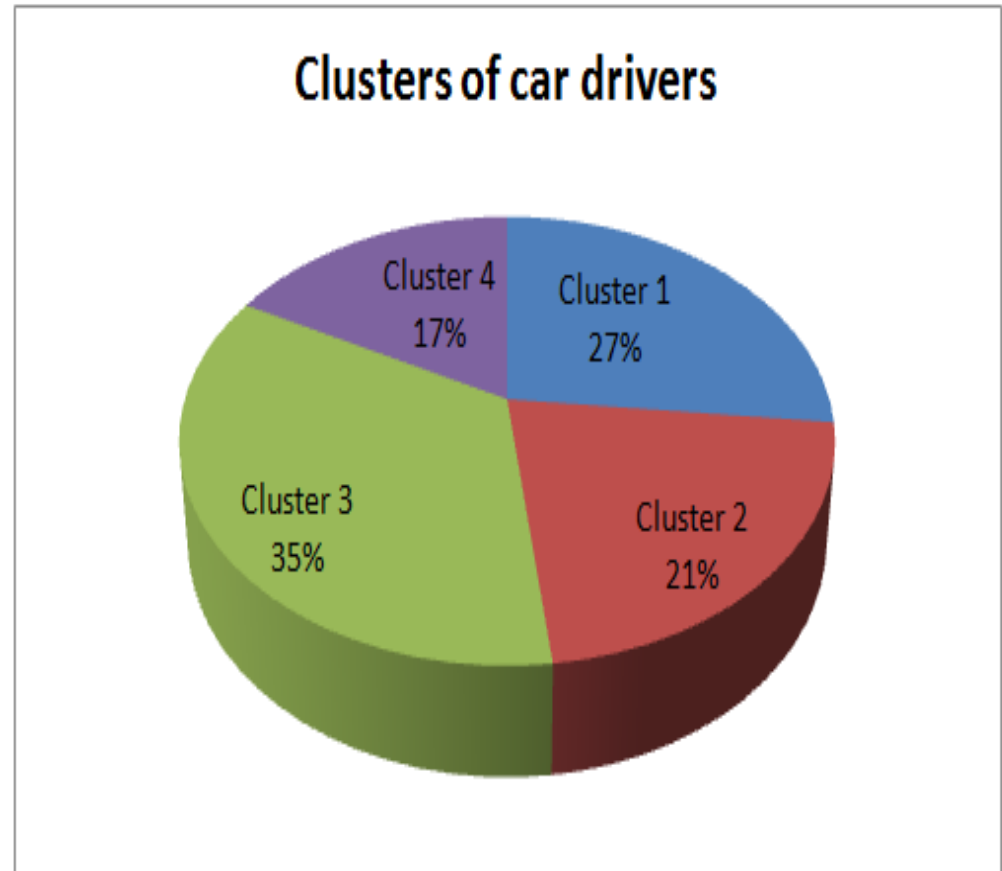


- Summary of factors (continue)
 - **Factor 5:** Frequency of mobile phone use in driving and its association with accident risk
 - **Factor 6:** Following too closely the vehicle in front, giving way to pedestrians
 - **Factor 7:** Age, frequency of hand free phone use while driving



Cluster analysis

- Based on factor scores
- 4 clusters of car drivers





- Summary of clusters
 - **Cluster 1:** Mainly older drivers who are neutral towards penalties, believe that mobile phone use increases the risk of accident but they occasionally use it
 - **Cluster 2:** Drivers with moderate driving behaviour but strongly disagree with more severe penalties for mobile phone use and speeding



- Summary of clusters (continue)
 - **Cluster 3:** They support penalties, less likely to talk on the phone when they feel tired, less likely to make or answer a call but have reported a past accident involvement
 - **Cluster 4:** Mainly young inexperienced drivers with risky behaviour and past accident involvement, likely to use the mobile phone although they consider it dangerous



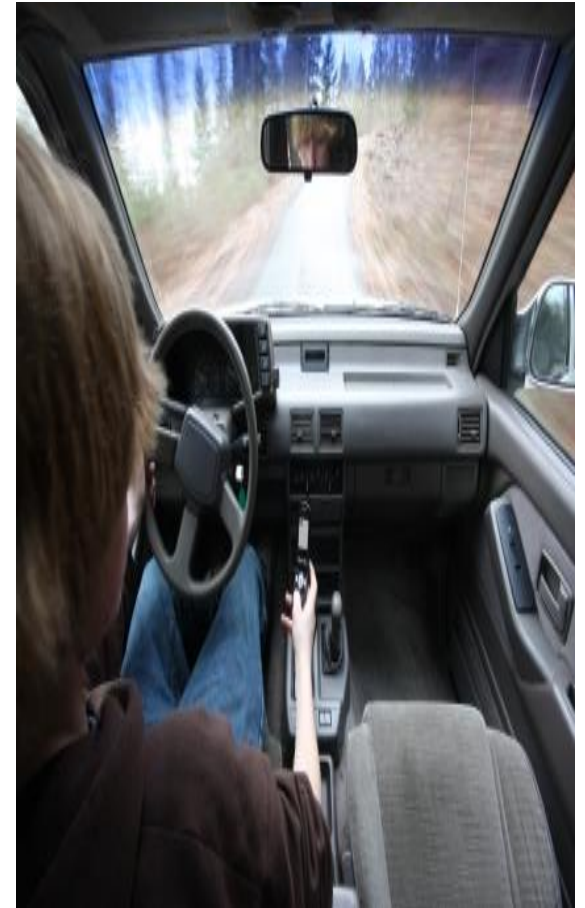
- Driver labels
 - Cluster 1: “Cautious”
 - Cluster 2: “Moderate”
 - Cluster 3: “Conservative”
 - Cluster 4: “Risky”



Conclusions (1)



- A large proportion of drivers use mobile phone while driving
- However, they considered to be a risky activity
- Younger drivers are more likely to use the mobile phone than older ones



Conclusions (2)



- Attitudes towards various measures and penalties show strong variation
- Need to test observed versus declared behaviour
- Attitudes and perceptions should be linked to accidents and fatalities





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