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Effects of Driver Accident Involvement on ITS Acceptance



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Objective



- ✓ Identify driver attitudes towards in Greece
 - ✓ Driver needs of ITS
 - ✓ Driver acceptability on ITS

- ✓ Relate driver behaviour towards ITS to driver-related parameters



❖ Data

- Within the framework of SARTRE (Social Attributes to Road Transport Risk in Europe)
- Identification of similarities and differences of the behaviour and attributes of drivers from different nationalities in relation to Road Safety on road safety issues
- Conducted in 23 European Countries in 2002
- ITS related questions on needs and acceptability

❖ Greek Survey

- Sample population: 1.000 active Greek drivers



❖ Examined ITS functions

- Intervening
 - Speed limit
 - Alcohol
 - Fatigue
- Driver information
 - Route Guidance
 - Traffic Congestion
- Monitoring
 - Black Box (accident data/cause)
 - Black Box (driver behaviour/police)
- e-Identification
 - Data for Driver Services
 - Data to Police



❖ Parameters

- General Driver Characteristics

- Age
- Gender
- Profession
- Education
- Area
- Area Size

- Specific Characteristics

- Vehicle Type
 - Vehicle Engine Size
 - Annual Driven Mileage
 - Speeding history
-
- Driver Needs
 - Driver Acceptability
-
- Accident Involvement

...to bare in mind



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Driver Attitudes ~ Background, Environment, Mentality, etc

✓ Greek Driver Particularities

- ❖ Road safety → high accident rates
- ❖ ITS implementation → unfamiliar with such systems
- ❖ Driver behaviour → proportion of highway-code violators

Accident Involvement



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In the last 3 years, how many damage only accidents have you been involved in, as the driver of a vehicle?

Damage only accidents

In the last 3 years, how many accidents have you been involved in, as the driver of a vehicle, in which someone (including yourself) was injured and received medical treatment?

Injury accidents

→ Future work will also involve the category of "no accidents"

Greek Driver Needs 1/3

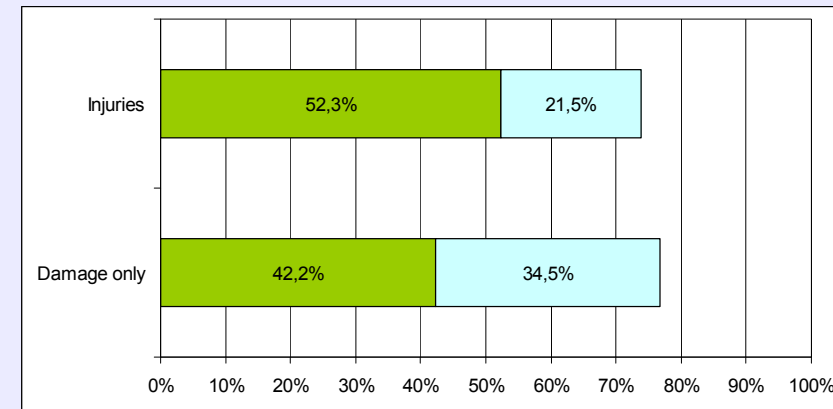


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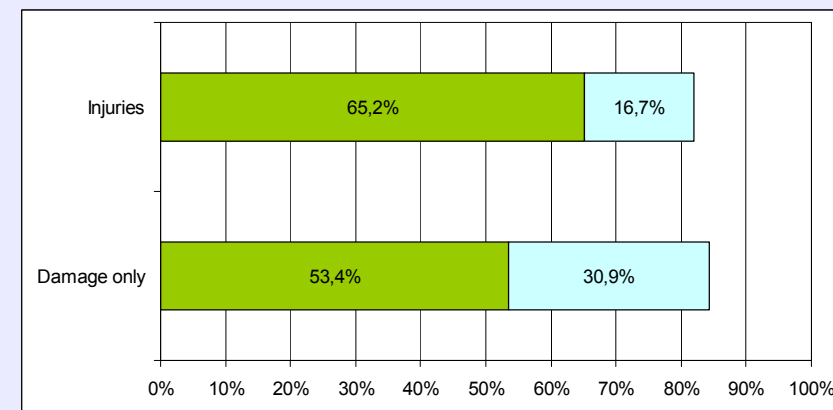


❖ Would you find useful...

A guidance navigation system to help you find your destination?



A congestion (traffic jam) warning device?



Very Useful

Fairly Useful

Greek Driver Needs 2/3



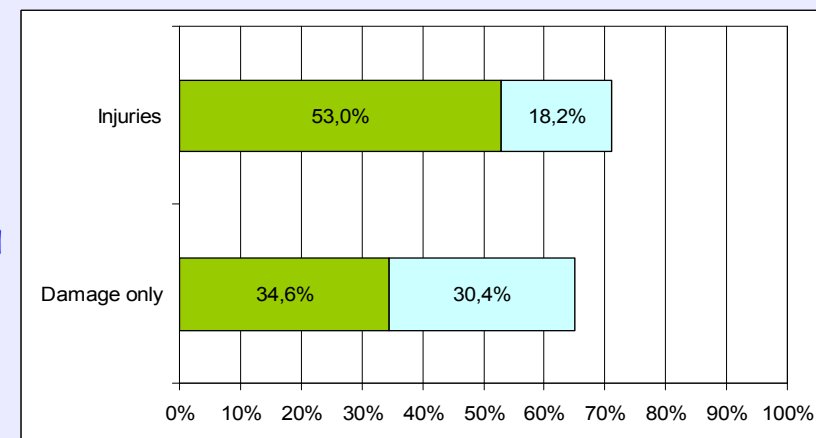
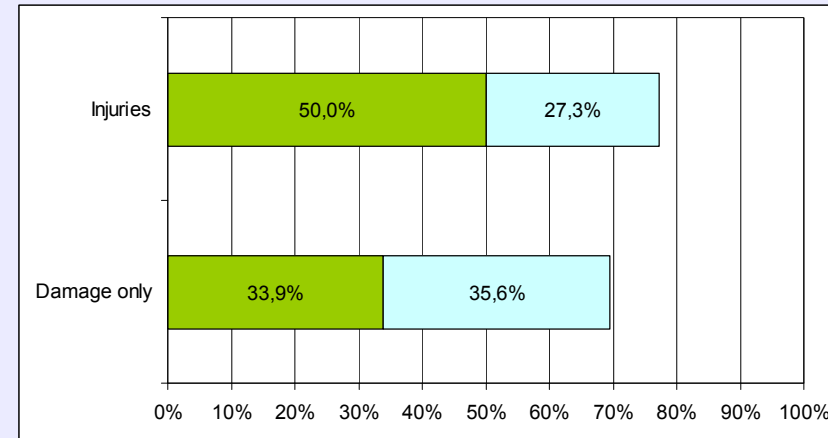
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❖ Would you find useful...

A system that prevented you exceeding the speed limit?

An alcohol-meter to check if you had been drinking and that prevented you driving if you were over the limit?



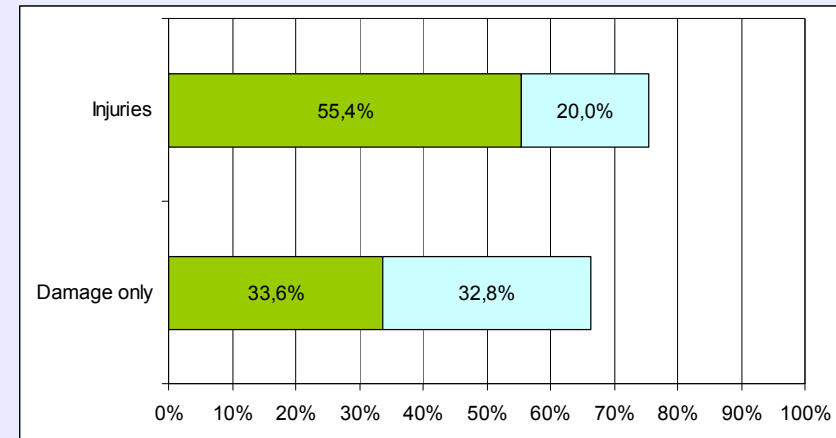
Very Useful Fairly Useful

Greek Driver Needs 3/3



❖ Would you find useful...

A system that detected 'fatigue' and forced you to take a break?



Very Useful Fairly Useful

❖ OVERALL - GREEK drivers find

...more useful information systems, and namely the warning congestion system, regardless of the accident history classification.

..least useful the alcohol system (damage and injuries), regardless of the accident history classification

Greek Driver Acceptability 1/3



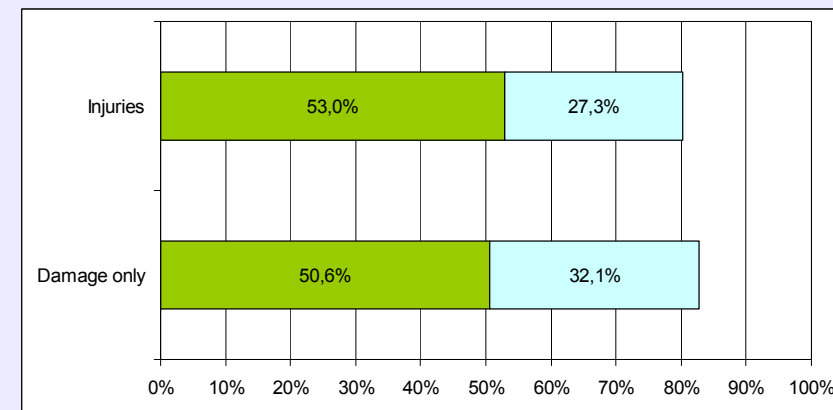
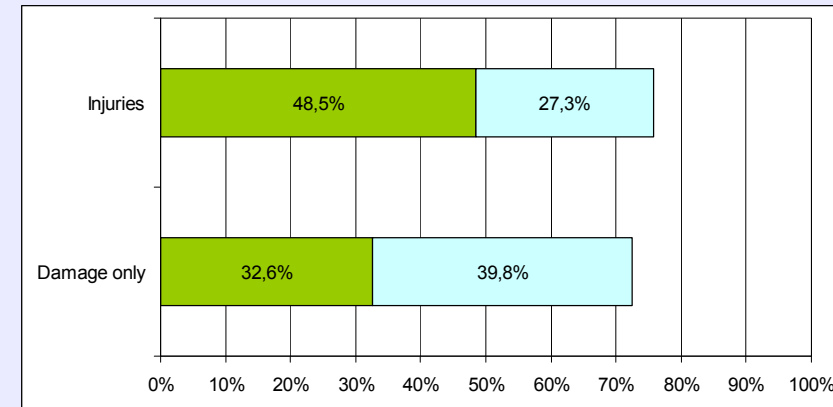
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❖ Would you be in favour of...

Speed limiting devices fitted to cars that prevent drivers exceeding the speed limit?

The use of a 'black box' to identify what caused an accident?



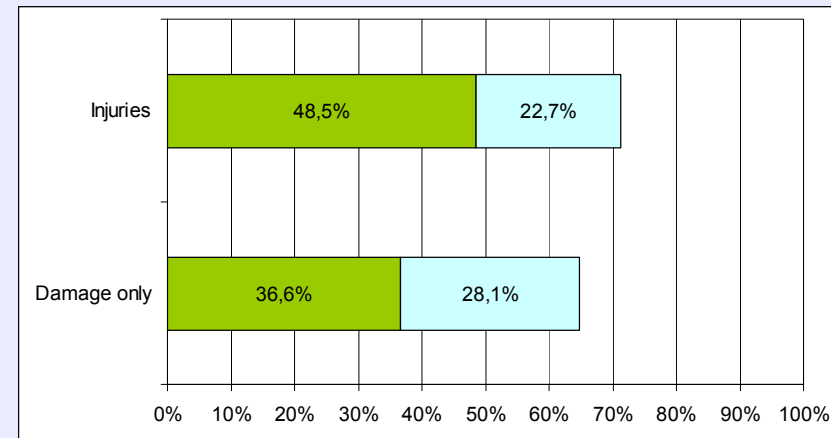
Very Fairly

Greek Driver Acceptability 2/3

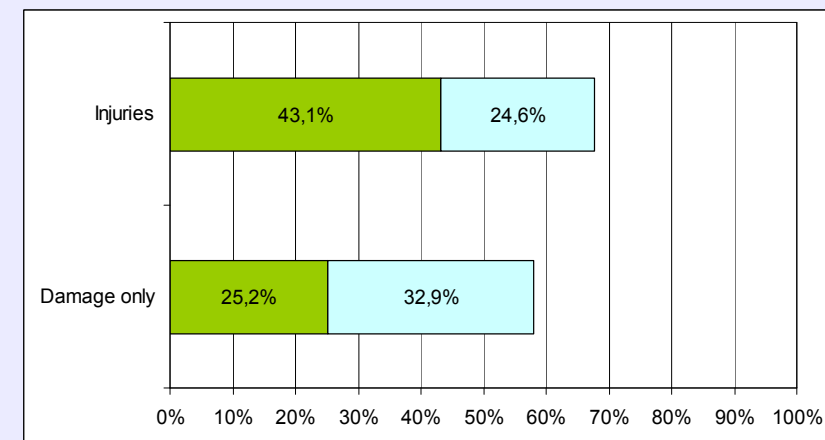


❖ Would you be in favour of...

The use of a 'black box' to record a driver's behaviour that could be used as evidence by the police to prove speeding/dangerous driving?



Electronic identification of your vehicle that would give access to services?



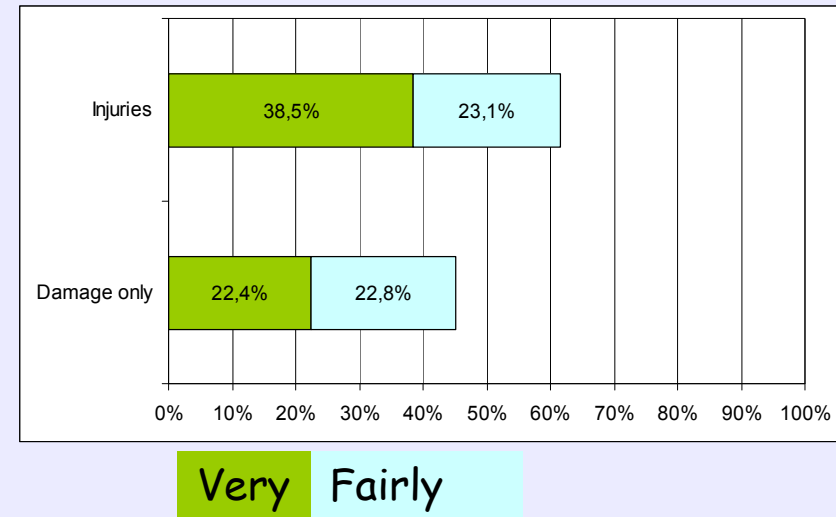
Very Fairly

Greek Driver Acceptability 3/3



❖ Would you be in favour of...

Electronic identification of your vehicle also for enforcement by the police?

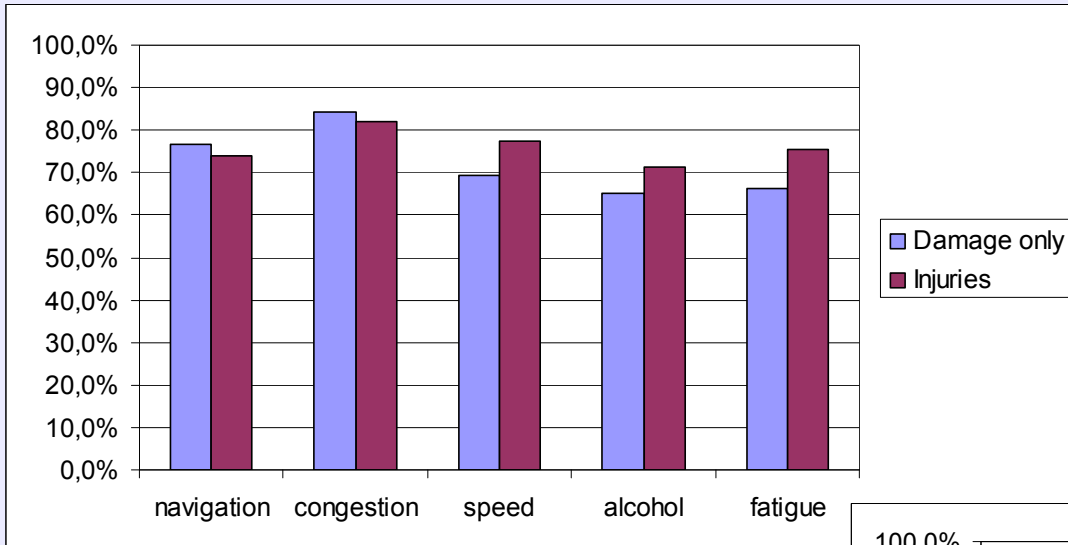


❖ OVERALL - GREEK drivers would be

...most in favour of a black box providing information about the accident, regardless of the accident history classification.

..least in favour of electronic identification providing information to the police, regardless of the accident history classification.

Conclusions 1/2



Need:

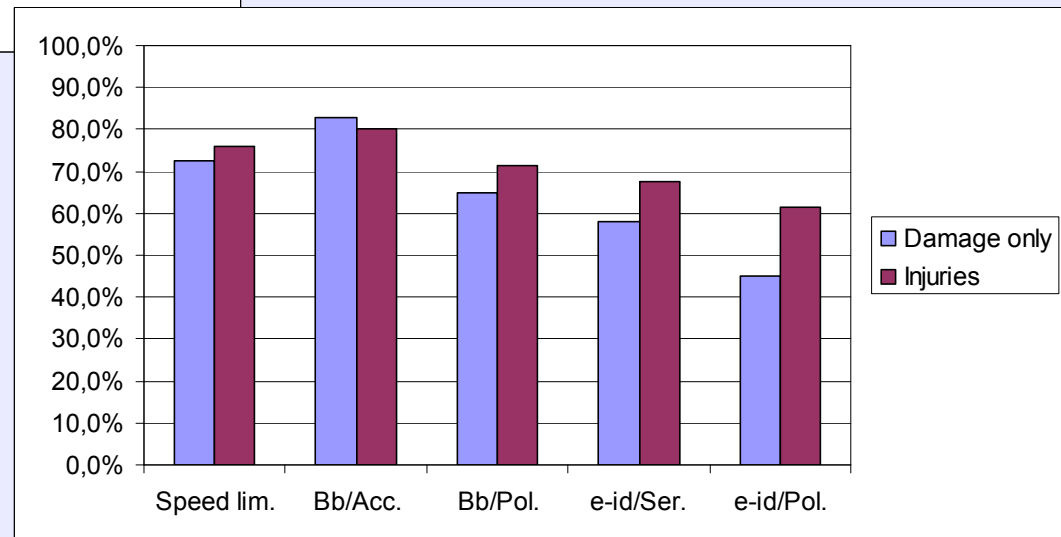
is ↑ for information systems

↑ with accident severity for control systems

Acceptability:

is ↑ for non intruding -
intervening systems

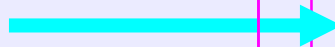
↑ with accident severity for
intruding-intervening
systems



- ❖ Both needs and acceptability score quite high
- ❖ There is a trend showing influence of accident history and driver attitudes
- ❖ Updated Clustering

Good/Popular Systems

- Route Guidance
- Traffic Congestion
- Black Box (accident data)
- e-identification (data for driver services)



Bad/Unpopular Systems

- Speed limit mon. & int.
- Alcohol mon. & int.
- Fatigue mon. & int.
- Black Box (driver behaviour)
- e-identification (data to police)

Future Work..



❖ Include the 'no accident' category in the analysis

Model estimated number of accidents (damage only or injury) from a number of parameters including driver and other specific characteristics and driver attitudes towards needs and acceptability...



❖ Check for correlations between driver attitude towards ITS and driver characteristics

❖ Check for correlations between driver attitude to specific ITS (alcohol, ISA) and related experience



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