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## Accident risk factors of young drivers and targeted countermeasures



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## ❖ Objective

Identify risky driving situations for young drivers and propose countermeasures

## ❖ Why??

- Major cause of deaths of young people
  - Immaturity
  - Inexperience

## ❖ Methodology

- Estimate risk rates (driver fatalities/veh-km's) of young drivers
- Review measures from international experience
- Propose most suitable ones to be implemented in Greece



### ❖ Driver exposure data

- Nationwide CATI travel survey
  - SRS technique - nationwide coverage
  - May-June 2004
  - Active drivers (over 16ys old)
  - Three part questionnaire  
(driver, vehicle, distance travelled)
- Estimation of exposure using the total no of registered drivers

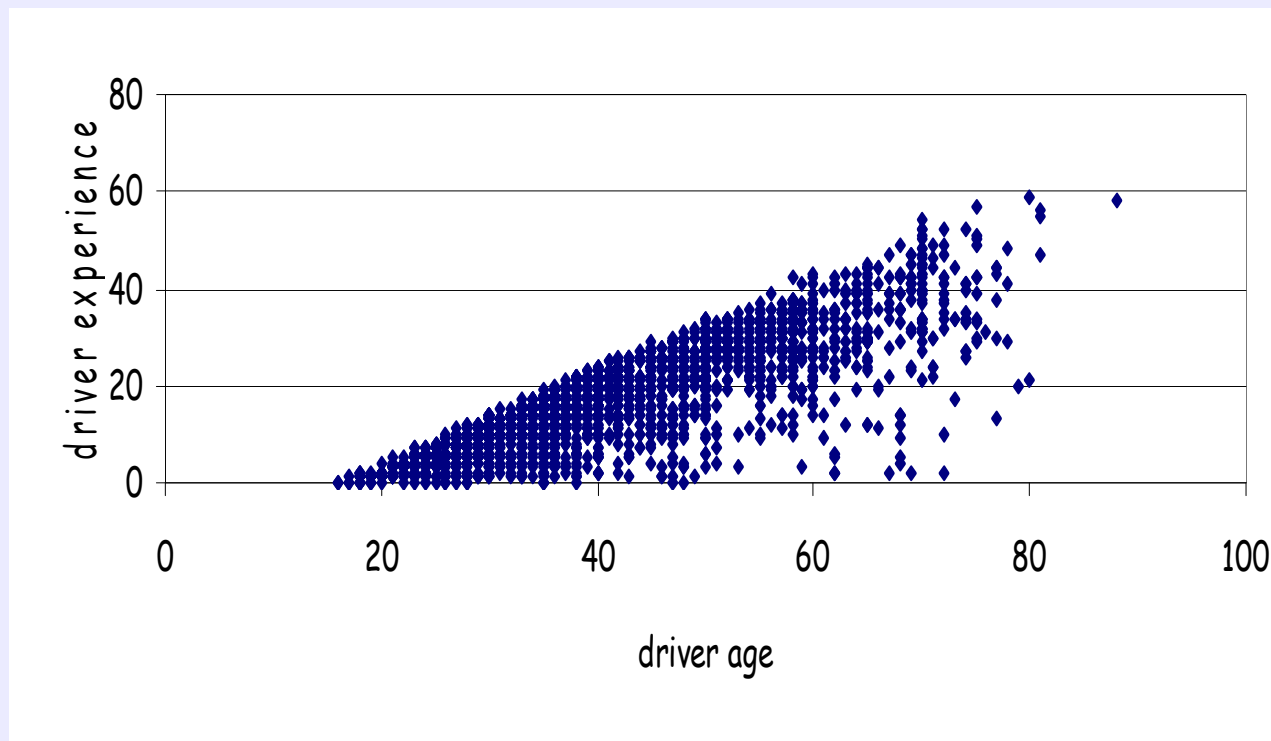
### ❖ Accident data

- National accident database

## Age vs. Experience



### ❖ Driver Age and Driver Experience

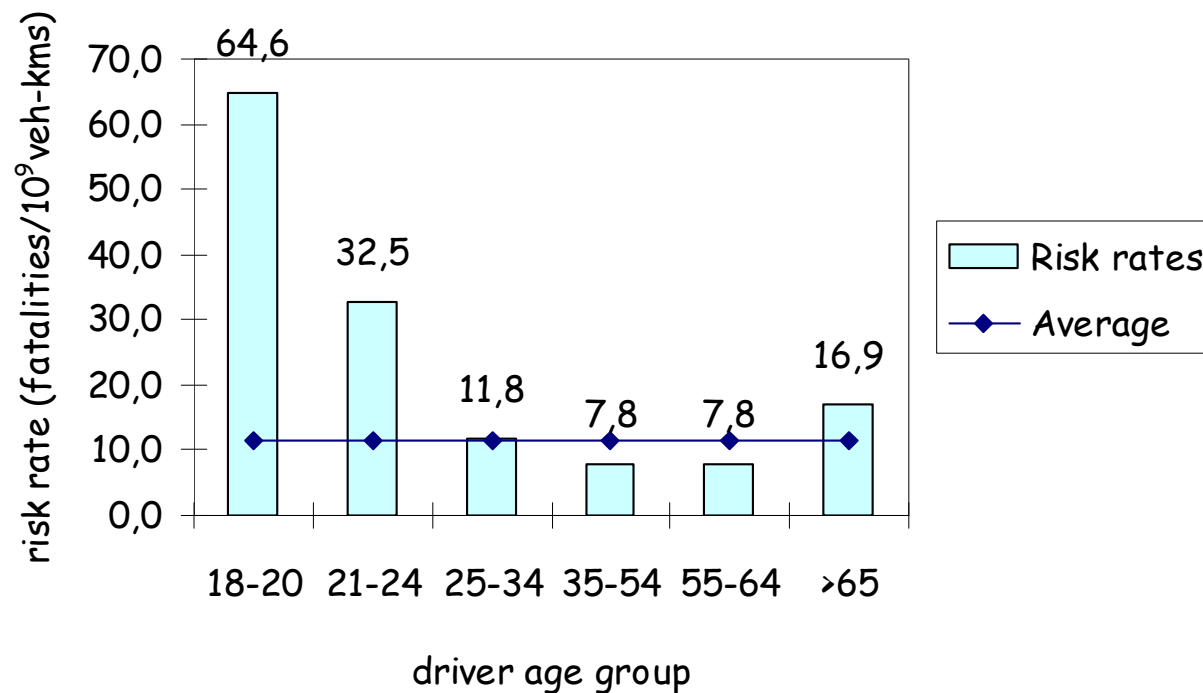


- Driver experience increases with driver age
- A few older drivers seem to have little experience
- Female drivers tend to get their licence later than male drivers

## Risk rates (1/5)



### ❖ Risk rates of different driver age groups



- Young drivers are a vulnerable road user group
- 18-20yrs both young and inexperienced
- Risk rates of elderly drivers are also quite high



## Risk rates (2/5)

### ❖ Driver age and experience

	18-20	21-24	35-54
< 1	25,5	46,1	26,8
1-2	20,4	13,7	34,5
3-5		14,8	6,7
6-10		0,0	6,4
>10			4,6
Average	63,4	31,2	7,8

- 1 year of driving experience is significant for 21-24
- For older drivers critical value is 2 years of experience

### ❖ Driver age and gender

	18-20	21-24	35-54
Male	85,3	44,2	9,6
Female	6,6	5,6	2,3
Average	65,0	32,8	7,8

- Relative difference between male and female risk rates decreases with age



## Risk rates (3/5)

### ❖ Driver age and vehicle type

	16-17	18-20	21-24	35-54
Moped	54,7	31,0	20,8	44,4
Motorcycle		313,0	162,7	47,6
Passenger car		41,5	20,7	5,8
Average		65,0	32,7	7,8

- Young riders of small (50-115cc) and large (270-730cc) motorcycles seem to exhibit high risk rates
- High risk rates for older
- No clear pattern for p.cars

- Risk rates ↓ with experience for motorcycle and p.cars
- Moped a safer mode for young drivers

### ❖ Driver age and engine size

	18-24	35-54
Two-wheers		
<49	26,6	45,1
50-115	184,2	55,7
116-269	92,7	44,5
270-730	670,8	41,4
>730		197,7
Average	103,3	56,3
Passenger cars		
<1100	24,3	17,8
1101-1300	13,0	4,9
1301-1600	31,8	5,8
>1600	22,0	3,7
Average	24,7	5,8



## Risk rates (4/5)

### ❖ Driver age and time of day

	18-20	21-24	35-54
Day	40,4	15,3	4,5
Night	108,0	93,0	27,9
Average	65,0	32,8	7,8

- Relative risk difference between night-time and daytime driving increases with the increase of driver age

- Driving during the weekend is less safe for drivers aged 18-20 and 35-54 years old, and safer for drivers aged 21-24 years old

### ❖ Driver age and day of week

	18-20	21-24	35-54
Weekday	59,4	34,5	6,9
Weekend	73,6	28,6	10,3
Average	65,0	32,8	7,8



## Risk rates (5/5)

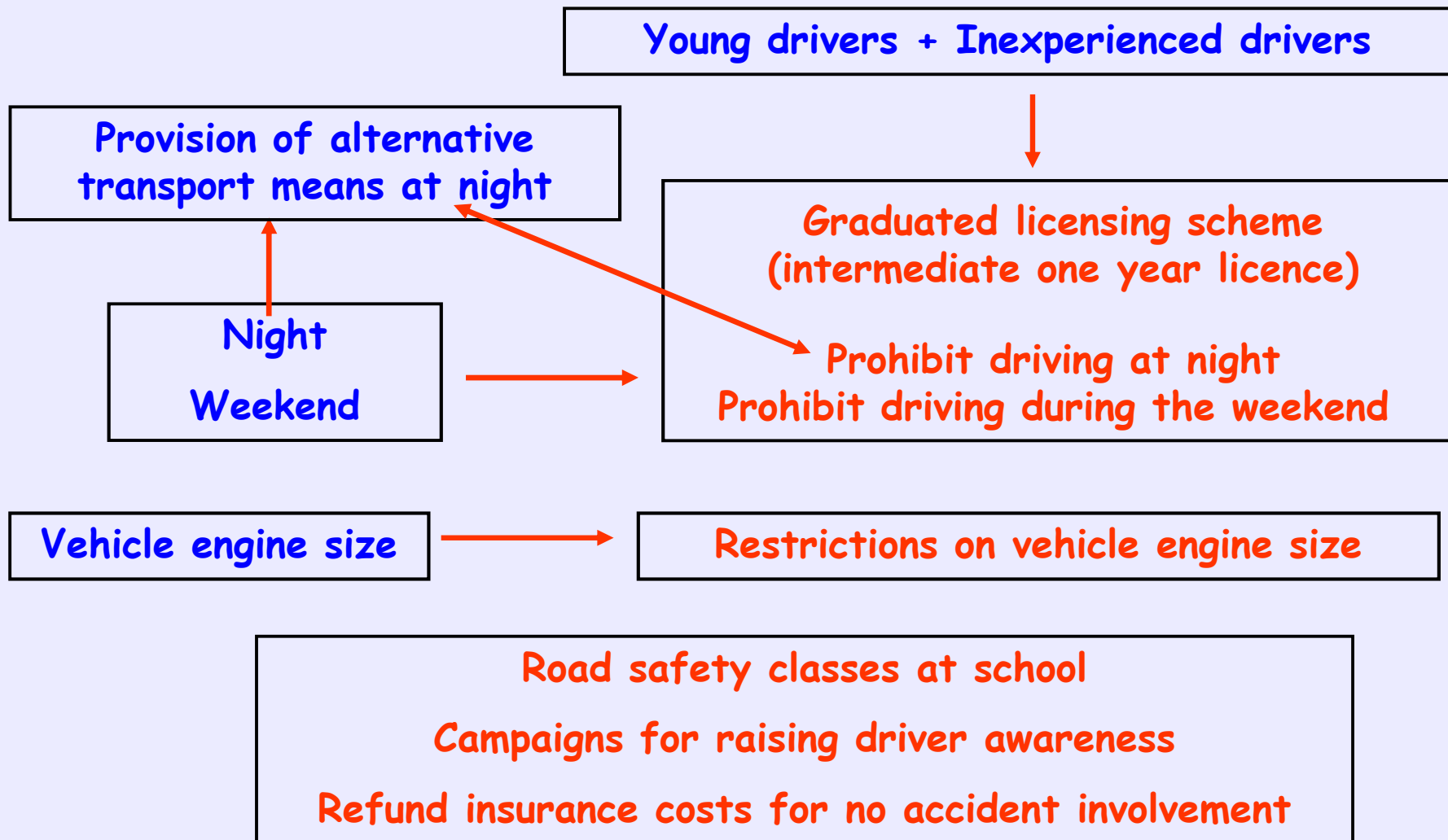


### ❖ Driver age and area type

	18-20	21-24	35-54
Residential area	76,6	28,3	6,2
Non-residential area	50,4	38,5	9,3
Average	65,0	32,8	7,8

- Drivers 18-20 yrs exhibit higher risk in residential areas, whereas drivers 21-24 and 35-54 yrs outside residential areas

# Countermeasures





### ❖ Conclusions

- ✓ Young drivers → vulnerable road user group
- ✓ Male, motorcyclists, night
- ✓ Internationally implemented policies need to be applied in Greece

### ❖ Future work

- ✓ Perform statistical analysis to identify possible correlations
- ✓ Design a model to estimate risk rates of young drivers

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