

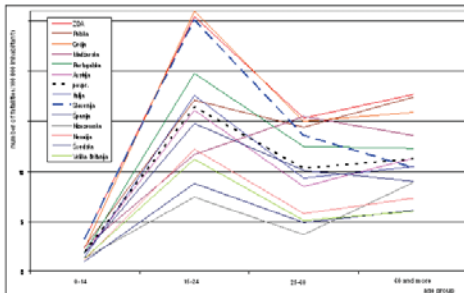
ROAD INFRASTRUCTURE IMPACT TO OLDER DRIVER'S TRAFFIC SAFETY

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The average age of population in general increases.
In Slovenia people over 60 years represents 21,6% of population.
Consequence – larger number of older participants in traffic accidents.
Road infrastructure impact is very important to traffic safety level.

PROBLEM



No. of persons involved		Dead		Serious injuries		Other injuries		Uninjured		
60+	% of all	60+	% of all	60+	% of all	60+	% of all	60+	% of all	
2009	5 897	9,5	64	19,1	189	17,6	821	6,1	3 689	6,3
2010	6 028	9,7	52	16,7	181	15,9	1 012	6,4	4 431	6,9

all persons involved in accidents

No. of persons responsible		Dead		Serious injuries		Other injuries		Uninjured		
60+	% of all	60+	% of all	60+	% of all	60+	% of all	60+	% of all	
2009	4 103	9,9	31	17,5	91	14,1	275	5,9	2 292	7,7
2010	3 973	10,5	23	12,4	122	12,9	208	6,2	2 751	8,4

persons that caused those accidents

	2009		2010	
	60+	% of all	60+	% of all
drivers	20	19,61	17	16,24
passengers	17	26,15	13	20
pedestrians	27	57,45	21	40,65
tractor drivers	2	28,57	1	11,11
motorbike drivers	4	16,36	3	23
cyclists	11	47,83	13	56,52

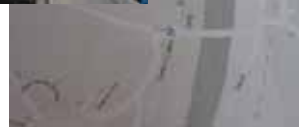
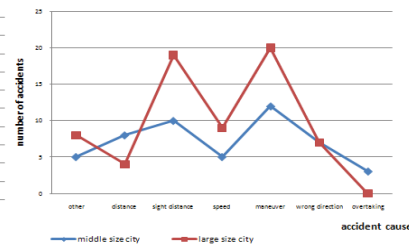
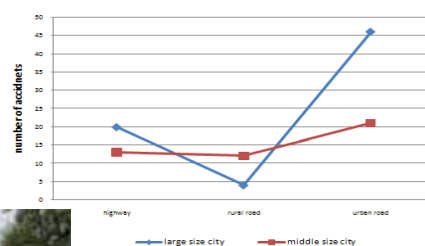
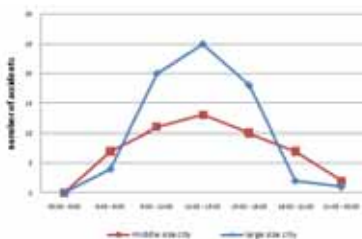
all persons involved in accidents by the role played in accident

	2009		2010	
	60+	% of all	60+	% of all
drivers	17	22,97	13	16,3
pedestrians	16	69,57	9	40,91
tractor drivers	2	28,57	0	0
motorbike drivers	3	42,86	2	28,57
cyclists	9	39,13	9	47,37

only persons that caused those accidents

RESEARCH

Traffic accidents data analysis – from two Slovenian cities (large and middle size), including only drivers.
Input data: date and time of accident, injury level, role of accident participant, age, road type, road stationing, accident cause, accident description, road and environment condition.
On situ investigations of all accident spots.
Researching the relations between road infrastructure elements and traffic accidents (driver behaviour) with focus on pre-crash phase.



FINDINGS TO ADDITIONAL RESEARCH

It was established:

- Most accidents happened in peak hours – reduced motorical ability caused larger needed driver's reaction time.
- In both cities most accidents happened in urban roads – mobility and travel behaviour of older traffic participants.
- Main cause for accidents in both cities is bad sight distance and maneuver with vehicle.

Older driver's opinion: non-lighted and multilane intersections are less safe. On open road sections reduced safety is caused by higher speed.

Confirmation: accident analysis shows, the largest number of accidents happen in urban roads, in both above mentioned types. Cause of accidents in highways is mostly high speed and wrong driving direction while entering highway.

In situ observations was made in intersections with accidents record – findings:

- Problems in non-lighted intersections:
- Inadequate visibility angle with regard to speed limit in main road.
 - Incomprehensible or too many traffic signs.
 - Connection to main road in curve.
 - Visibility – lighting.

- Problems in multilane intersections:
- High speed in main road – older driver's reaction time is longer, due to reduced motorical abilities the maneuver of inclusion to the main road or turning left to minor road became dangerous.
 - Infrastructure, signalization and guidance of cyclists and pedestrians in intersection area.

Using basic Haddon matrix, analysing the environmental factors in pre-crash phase, in additional in depth research the impact of road design and layout elements, speed limits and pedestrian/cyclist facilities will be made.

Additional in situ research will be made in different environmental conditions to consider various impact to traffic safety. Using statistical methods and T distribution (because of small data sample), the correlation between traffic safety and road elements will be evidenced.