



THREATS IN TRAFFIC FOR THE YOUNG PEOPLE IN THE TERRITORY OF SERBIA

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Abstract:

Every year 1.2 million people from all over the world are killed in traffic accidents. Hundreds of thousands of people get injured on the roads, and a very large number of them remain permanently handicapped and disabled for further independent life. The participation of young drivers in traffic accidents with the killed and traffic accidents with injured persons is very high. Injuries in traffic accidents take the second place as causes of death among young people aged 5 to 25.

The paper analyses the characteristics of casualties in traffic belonging to the age group from 15 to 24 in the territory of the Republic of Serbia in the period from the year 2002 to 2006. A special emphasis in the paper is placed on spatial distribution of casualty risk among young participants in traffic. For that purpose, we prepared the public risk map for death in the age groups from 15 to 19 and 20 to 24 per municipalities in the Republic of Serbia.

The objective is to establish spatial distribution of casualty risk for members of those age groups per municipalities in Serbia and to identify in such a way the areas with the highest public risk in traffic.

Key words:

Traffic, Safety, Risk, Young People

1. INTRODUCTION

Every year, according to the statistics, 1.2 million people are known to die in road accidents worldwide. Millions of others sustain injuries, with some suffering permanent disabilities [4].

The analyses of traffic accidents and their consequences all over the world show a large share of the young people in the number of casualties in traffic. A high level of participation of the young people in traffic accidents is a critical element of social and economic cost for the social community.

Different age groups are characterised by different knowledge, attitudes, capacities, behaviour, and different traffic exposure. Injuries in traffic accidents take the second place as causes of death among young people aged 5 to 25 while among young participants in traffic aged up to 25 young men make 75% of casualties.

Most often, young people show the appropriate physical preconditions but they still lack life and traffic experience, maturity in traffic, which could give the most favourable shape to those preconditions that is necessary for accomplishment of the final aim. They have good perceptive and reaction capacities but that is not sufficient for safe vehicle driving. Among young people, there is often a disharmony between self-confidence, actual psycho-physical capacities of their bodies and technical potentials of their vehicles. In all age groups, overestimating of one's own subjective potentials is a frequent case caused by still undefined self-awareness, insufficiently developed self-consciousness, and self-criticism, unawareness of one's own limitations.

The subject of this paper are the casualties in traffic belonging to the age group from 15 to 24 in the territory of the Republic of Serbia in the period from the year 2002 to 2006. The main objective of this paper is to establish spatial distribution of casualty risk for members of those age groups per municipalities in Serbia and to identify in such a way the areas with the highest public risk in traffic.

There are certain limitations in the paper due to the current social-political situation at Kosovo and Metohija so that this Province has not been included in the research. We used the databases from the UIS (unified information system) of the Ministry of Internal Affairs (MIA) of the Republic of Serbia, so that the quality of results obtained through the analyses depends on accuracy of the input data.

2. METHOD OF WORK

In the research of threats to young participants in traffic, we applied the following methods in order to obtain the best quality results:

- ✚ Statistical method
- ✚ Analytical method
- ✚ Classification method (finding of sets with similar properties);
- ✚ Method of comparison (comparison of the same or similar facts, phenomena or processes, namely finding of their similarities in behaviour and differences);
- ✚ Method of presentation of results in graphs.

From the needs of the research we established the database on casualties among young participants in traffic accidents in “MICROSOFT ACCES” programme software. For data processing we used “MICROSOFT EXCEL” programme software, an data were presented on maps for the purpose of easier spotting of municipalities in which it is necessary to implement the traffic safety strategy aimed at reduction of number of casualties among young participants in traffic.

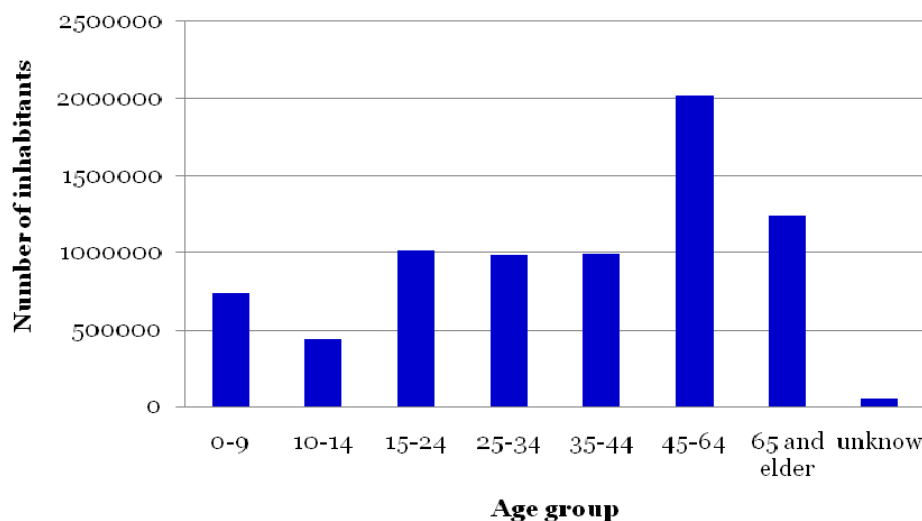
3. THE OUTLINE OF THE MOST SIGNIFICANT RESEARCH RESULTS

3.1. Population structure in Serbia

According to the results of the research of the World Health Organisation (WHO) 3,242 persons die on the average a day on the roads in the world. From 20 to 50 million people a year get injured or permanently disabled in traffic accidents. In Serbia, 4,423 persons were killed in traffic accidents in the period from 2002 to 2006 and 83,563 of them were injured. The number of the killed persons aged from 15 to 24 is 625 (15% of the total number of those who were killed) while 21,560 of them were injured (25% of the total number of those who were injured).

In order to be able to analyse and evaluate traffic safety in a country it is necessary, first of all, to analyse the structure (the age structure in particular) of the population of the relevant country.

The last census was conducted in Serbia in 2002 by the Republic Institute for Statistics of Serbia. Persons aged from 15 to 24 make 13.49% of the population (Graph 1).



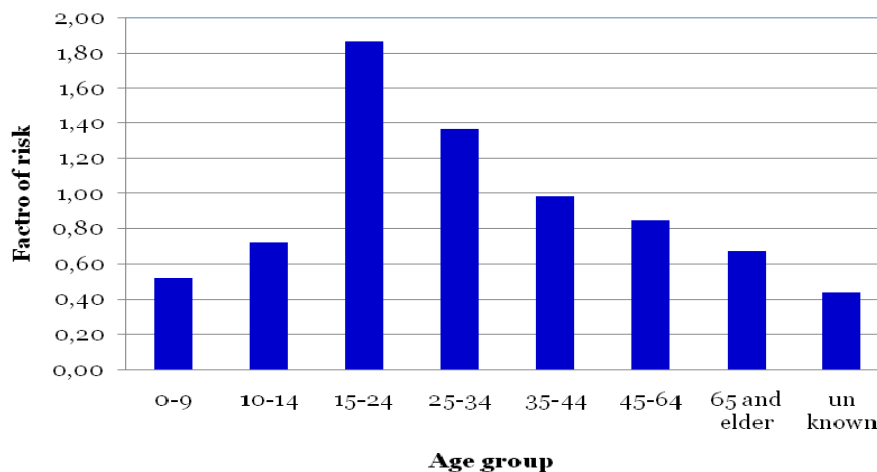
Graph 1. Population structure per age groups, Serbia, the results of the census from 2002 [2]

3.2. Structure of casualties among participants in traffic according to consequences

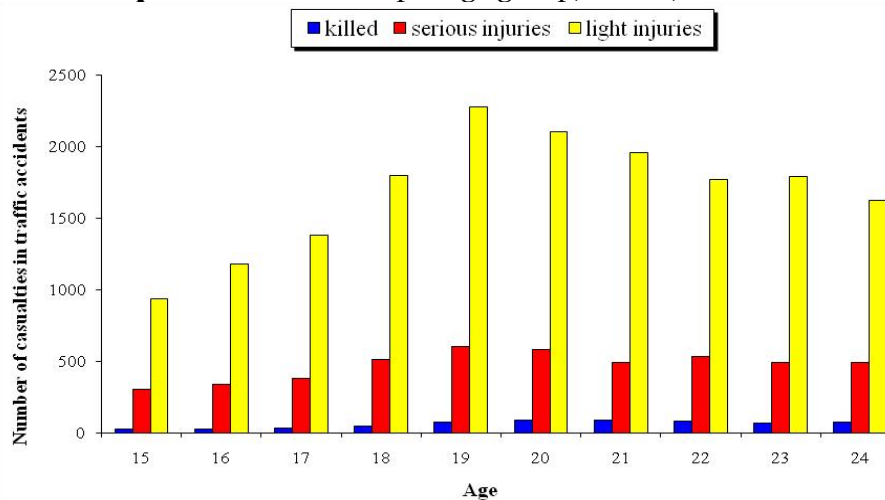
The highest share in the structure of casualties among participants in traffic belongs to persons in the age group from 15 to 24 (Table 1). Out of 87,986 of casualties in total in the analysed period 22,185 (25.21%) of casualties belong to the age group from 15 to 24. The number of casualties among members of the age group from 45 to 64 is also very high - 20,212 (22.97%) of casualties among participants in traffic. They are followed by the age group from 25 to 34 and from 35 to 44. If we take into account the fact that the age group from 45 to 64 is far more numerous than the age group from 15 to 24, it is clear that the number of casualties in a younger age group is even more emphasised.

Table 1. Structure of casualties among participants in traffic according to consequences per age groups, Serbia, 2002-2006

Age group	Killed	serious injuries	light injuries	Number of casualties
0-9	123	978	3400	4501
10-14	69	947	2719	3735
15-24	625	4740	16820	22185
25-34	642	3736	11429	15807
35-44	529	2949	7989	11467
45-64	1320	6010	12882	20212
65 and elder	1100	3492	5241	9833
unknow	15	51	180	246
Sum	4423	22903	60660	87986



Graph 2. Factor of risk per age group, Serbia, 2002-2006



Graph 3. Casualties in traffic accident for young people (15-24 years), Serbia, 2002-2006

3.3. Spatial distribution of casualties among young participants in traffic

Establishing of the level of threats to certain groups of participants in traffic is most often based on the scope of public risk (casualties and number of those who were killed).

Public risk of deaths in traffic represents the number of the killed young participants in traffic per 100.000 of young people, and number of casualties among young participants in traffic per 100.000 of young people represents the public risk of casualties in traffic.

For the needs of those analyses, we used the following two databases in this paper:

- ✚ Number of inhabitants per municipalities in the territory of Serbia
- ✚ Number and characteristics of traffic accidents and their consequences per municipalities in the territory of Serbia.

Ranking of casualties among young participants in traffic according to the public risk scope is determined through setting of public risk ranks and classes (Table 2). First, we determined the lowest, and the highest value and scope of the risk and later on we defined the risk classes in-between those two values.

Table 2. Public risk ranks and classes for threats to young people

Ordinal No (mark of traffic safety)	Level of risk (description)	Public risk	
		class (interval)	rang (color)
1	low risk	up to 5,0	
2	low-medium risk	[5,0 – 10,0)	
3	medium risk	[10,0 – 15,0)	
4	high-medium risk	[15,0 – 20,0)	
5	high risk	over 20,0	

Based on the ranking of casualties among young people in traffic that has been carried out in such a way, we can identify and single out the municipalities with the highest public risk, namely the municipalities where undertaking of measures aimed at reduction of traffic threats to young participants in traffic is urgently needed.

3.4. Public risk of casualties among young participants in traffic in the territory of Serbia

According to the above-mentioned criterion, the highest risk of deaths among young people (those aged from 15 to 19) in traffic is present in the territory of municipality of Backi Petrovac and it makes 57.9 of the killed young people per 100,000 young people. A very high risk of deaths among young people is also present in 23 municipalities in Serbia, such as the municipality of Malo Crnice (50.6), Ivanjica (43.1), Prijepolje (42.3), Cajetina (41.9), and Knjazevac (41.4) etc. The municipalities with a very low risk include the municipality of Cacak (4.9), Stara Pazova (4.1), Leskovac (3.9), Novi Sad (2.0), Kragujevac (1.6) etc.

When it comes to threats of casualties among young people aged from 20 to 24 the situation is somewhat different. If we compare Figure 1 with Figure 2 we can see that the number of municipalities with a very high risk of deaths among young people aged from 20 to 24 is much larger (50) than in the age group from 15 to 19 (23). Namely, the highest public risk of deaths has been identified in the territory of municipality of Cajetina – it makes even 114.5. The public risk of deaths is also very high in the territories of municipalities of Velika Plana (83.2), Kanjiza (78.9), Zabalj (63.2), Sremski Karlovci (62.9), Backi Petrovac (61.5) etc. In the territories of those municipalities, the number of casualties among young people per 100,000 of young participants in traffic is far higher than in the territories of other municipalities in the Republic of Serbia.

The graph presentation of distribution of public risk of deaths (Figure 1 and Figure 2) shows the best the threat ratio among young people aged from 15 to 19 and young people aged from 20 to 24. Such presentation also simplifies spotting of municipalities that should be the first to become the “subject” of measures of reduction of threats to young people in traffic.

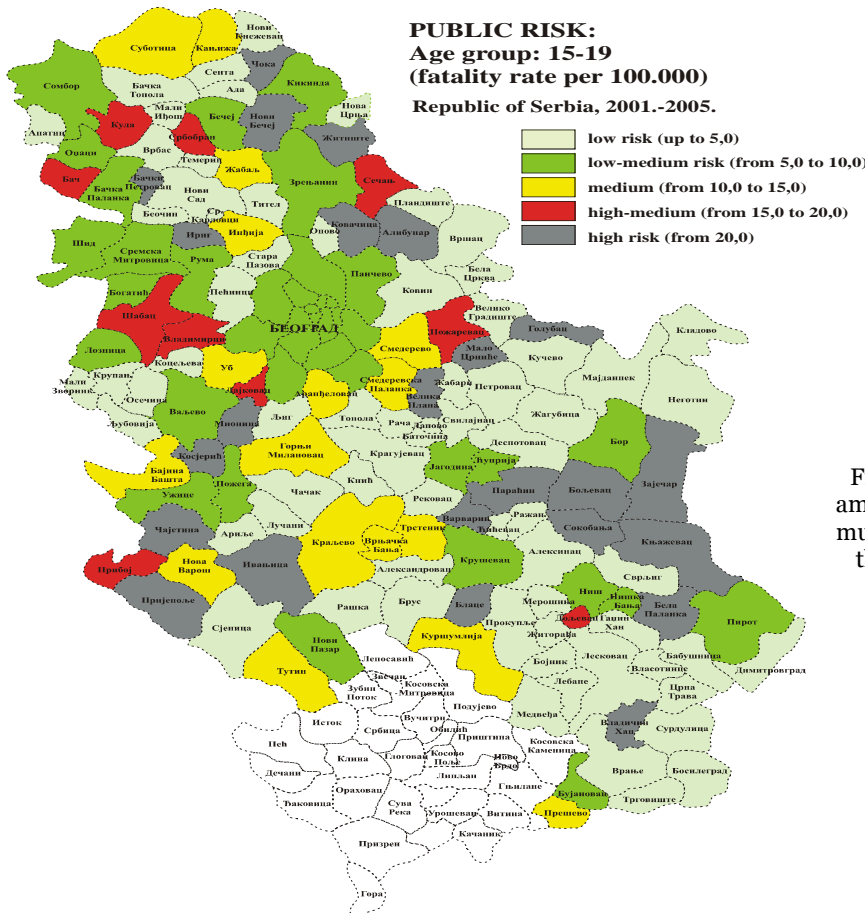


Figure 1. Public risk of deaths among young people (15-19) per municipalities in the territory of the Republic of Serbia in the period from 2002 to 2006

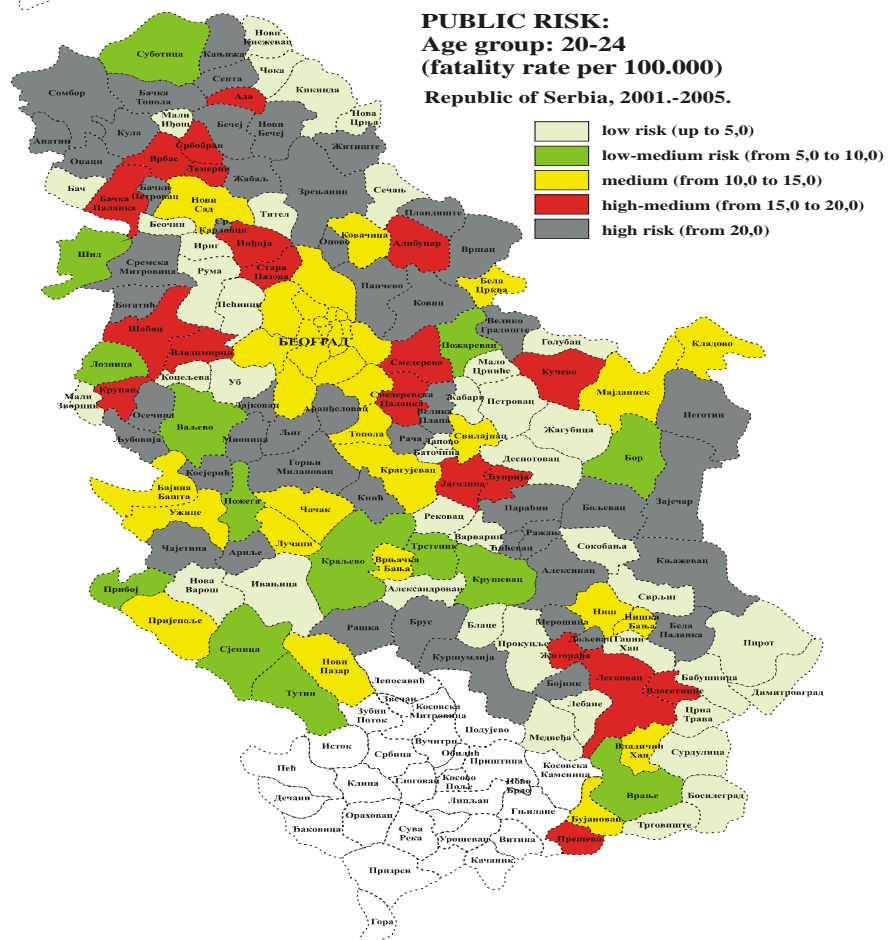


Figure 2. Public risk of deaths among young people (20-24) per municipalities in the territory of the Republic of Serbia in the period from 2002 to 2006

4. FINAL CONSIDERATIONS WITH GENERAL PROPOSAL OF MEASURES

In the period from 2002 to 2006, 87.986 of persons were casualties in traffic accidents on the roads in Serbia and 22.185 of them belong to the age group from 15 to 24.

An emphasised number of casualties among young people is not the problem in Serbia alone but in many developed countries of the world as well so that this phenomenon has to be analysed as the problem, which has to be treated as a high priority one within public reactions of the society on the whole. Due to that, the attention has to be paid to special measures that can contribute to reduction of the number of traffic accidents with young participating young drivers.

Local government is always playing a significant role in traffic safety and its responsibilities cover a wide spectrum of social services, from technical to health care and social services. In order to develop an efficient traffic safety programme it is necessary to prepare and conduct a comprehensive analysis of traffic safety, which should be updated periodically (per time intervals during the year, per year etc.).

Some of the measures that should be implemented aiming at improving traffic safety among young people in traffic include:

- ✚ Young people are capable of clear spotting, understanding, evaluating, and reacting fast and their memory is sharp and vivid. Therefore, the most efficient measure within social reaction towards the young people is timely and quality preparation for traffic in order to take the advantage and channel properly the advantage that young people possess.
- ✚ The introduction of graded driving licence – upon legal maturity young people are liable to obtain driving licence for all categories of vehicles, except for buses and trolleybuses. As it has been noted that the system of preparation for traffic does not produce “safe” drivers, it is necessary to prescribe issuing of temporary driving licences with the validity period of two years for the beginners, which will not allow them to carry out more complex driving tasks.
- ✚ The establishment of the Traffic Safety Agency within the Government, which will have the authority and responsibility for decision making, control over resources and coordinate the work of all Government sectors dealing with traffic safety (health care, transport, education and police).
- ✚ Preparation of the national traffic safety strategy and action plan – traffic safety strategy should take into account the needs of all the participants in traffic, in particular of vulnerable categories and it should be linked with strategies in other sectors. Practically speaking, each municipality in Serbia should pass its own traffic safety strategy in accordance with characteristics obtained through the analysis because its efficiency during implementation may be threatened if it is not the result of concrete analysis.
- ✚ To promote educational campaigns designated to young people in traffic.
- ✚ To improve and maintain the database on accidents and casualties.
- ✚ To carry out and stimulate researches, monitor and implement practices from successful countries.

Such an approach in consideration and further resolving of problems in traffic safety promotes the implementation of further researches in the field of traffic safety at a micro-level, which represents the additional quality in further work related to enhancement of its protection mechanism.

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