

Traffic Safety and Demographic Characteristics of the Republic of Srpska and Banja Luka

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Abstract: Banja Luka and the Republic of Srpska, like most countries in the world, record a large number of traffic accidents and fatalities. An additional burden on the Republic of Srpska is its poor demographic picture. After the 2013 census, a constant decline in the number of inhabitants was evident in the Republic of Srpska. Banja Luka recorded an increase in the number of inhabitants in the same period. The paper includes an analysis of traffic safety and demographic characteristics in the area of the Republic of Srpska and Banja Luka, and their comparison.

Key words: traffic safety, fatalities, population.

INTRODUCTION

The Republic of Srpska and Banja Luka are faced with an unsatisfactory number of traffic accidents and their consequences every day. The Republic of Srpska is aware of the importance of preventive action on traffic safety, so the National Assembly and the Government adopted the Strategy [1] and the Road Safety Program of the Republic of Srpska [2]. By adopting an appropriate strategy and taking the necessary measures, attempts are being made to reduce the number of traffic accidents and their consequences. The National Assembly of the Republic of Srpska reviews the implementation of actions and the achievement of results every year [2].

Although in recent years a decrease in the number of people killed in traffic accidents has been recorded at both levels of observation [3], the situation is still unsatisfactory. Namely, there is still no pronounced continuity in the decline in the number of traffic fatalities by year. Last year had bad consequences in the field of traffic safety. At both levels, an increase in traffic accidents and people killed in them was recorded, compared to data from several previous years.

On the other hand, the data on the number of inhabitants is also worrying. The Republic of Srpska is experiencing a constant decline in the number of inhabitants. According to statistical data, after the first census (2013), in the past eleven years, the number of inhabitants has decreased by 56,360 [4]. The Republic of Srpska loses about fifteen residents every day. Unlike the Republic of Srpska, Banja Luka gains an average of 563

new residents per year, which means that it has two new residents almost every day. Banja Luka is the largest city in the Republic of Srpska, its administrative, economic and educational center, so the data on population migration is not surprising.

The paper collected and analyzed data on the number of traffic accidents and the number of fatalities in them in the territory of the Republic of Srpska and its largest city, Banja Luka. Subsequently, demographic characteristics were collected and analyzed for both levels of observation. Finally, the paper includes a comparative analysis and presentation of the number of fatalities and the number of inhabitants in the territory of the Republic of Srpska and Banja Luka.

ANALYSIS OF THE TRAFFIC SAFETY IN THE REPUBLIC OF SRPSKA AND BANJA LUKA

In order to determine the trend of traffic accidents and gain a better insight into the traffic safety situation in the Republic of Srpska and Banja Luka, summary data on the number of traffic accidents and fatalities were collected. The number of accidents and fatalities was analyzed separately for the Republic of Srpska and Banja Luka, and then their relationship and behavior trend were determined in a comparative analysis. The collected data are presented in tables, and the comparative analysis is presented using diagrams.

According to the number of traffic accidents and fatalities, the Republic of Srpska and Bosnia and Herze-

Table 1. Number of traffic accidents and fatalities in RS and BL, in the period 2013–2023

Year	Traffic accident data for the period 2013–2023											Average
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2013-2023.
Number TA, RS	8588	8581	9295	9783	9637	10369	10220	9069	9937	9894	10618	9635
FatalitiesRS	153	131	150	130	115	130	118	101	101	100	109	122
Number TA, BL	4559	3797	4340	4458	3721	3949	4170	3852	4227	4203	4857	4194
Fatalities BL	70	39	53	45	30	32	32	20	26	19	28	36

govina are in a higher risk zone compared to the countries of the European Union [5]. Banja Luka is also burdened with a large number of traffic accidents. In some years, they represented more than half of the total number of traffic accidents in the Republik of Srpska [3].

Data on the number of traffic accidents and fatalities were collected based on regular annual reports of the Ministry of Internal Affairs of the Republik of Srpska on road traffic safety, and a joint review was made of them [3]. The Ministry of Internal Affairs of the Republik of Srpska has been collecting and creating a database of traffic accidents and fatalities continuously since the beginning of this century. In order to be able to conduct a comparative analysis of the number of fatalities and the number of inhabitants, the same observation years were analyzed. They include the analysis of data in all years after the first census of the population in the Republik of Srpska. That is the period from 2013 to 2023.

An overview of the number of traffic accidents and the number of fatalities in them in the territory of the Republik of Srpska and Banja Luka can be shown for each analyzed year (Table 1).

The number of traffic accidents

In the tabular presentation of parameters that show the state of traffic safety in the analyzed areas, an unevenness in the number of traffic accidents is observed, by year, at both levels of observation. In the Republik of Srpska, the number of accidents first increased and then decreased, only to have a high value again in the final year. In Banja Luka, the number of accidents, from the beginning, generally decreased, only to have a high value in the final years.

In the territory of the Republik of Srpska, in the initial year of observation, 8,588 and in the final year 10,618 traffic accidents were recorded. On average, 9,635 traffic accidents occurred annually. In Banja Luka, in the initial year of observation, 4,559 traffic accidents were recorded and in the final year 4,857. On average, 4,194 traffic accidents occurred annually in the city area. The economic, social and educational importance of Banja Luka in the Republik of Srpska affects the attraction of a large number of people and the occurrence of a large number of traffic accidents. In some years, they represent about half of the total number of traffic accidents in the Republik of Srpska, and even more than that [3].

The analysis of traffic accidents and their consequences, and then the taking of appropriate measures to reduce their number, has been carried out especially during the last decade. During this period, the competent republican and city institutions have taken a number of measures and actions in the field of traffic safety. Significant progress has been made in this area at both levels, especially in terms of reducing traffic fatalities, thereby contributing to the global action plan for increasing road traffic safety [6]. However, it can be stated that both Banja Luka and the Republik of Srpska continue to face a large number of traffic accidents and fatalities [3].

The number of fatalities

Data on the number of deaths always require special attention and their analysis should be approached carefully. In the territory of the Republik of Srpska, in the initial year of observation, there were 153 fatalities, and in the last year 109 people. The lowest number of traffic fatalities was recorded in the penultimate year of observation, 100 fatalities. On average, 122 people lost their lives per year. In the area of Banja Luka, in the first year of observation, there were 70 fatalities, and in the last year 28 people. The lowest number, 19 fatalities, was recorded in the penultimate year of observation. On average, 36 people lost their lives per year.

The ratio of the number of deaths in the Republik of Srpska and Banja Luka, in the time period from 2013 to 2023, is best shown by the corresponding curved lines of their movement, in the following diagram (Figure 1).

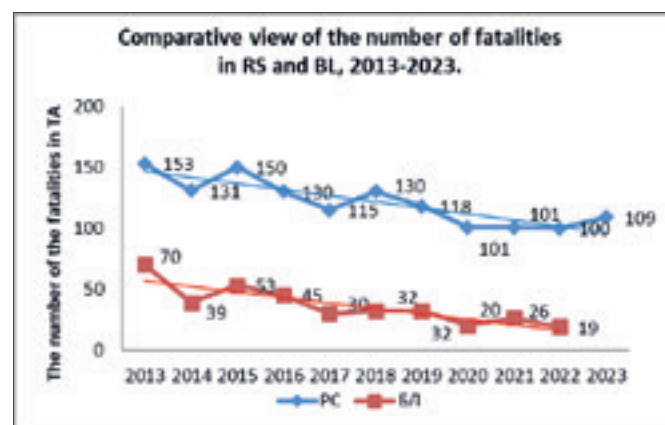


Figure 1: Overview of the number of fatalities in traffic accidents in the Republik of Srpska and Banja Luka, 2013–2023

Table 2. Data on the state of traffic safety in the Republik of Srpska in the period 2013–2023

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fatalities RS	153	131	150	130	115	130	118	101	101	100	109
Population	1171179	1167082	1162164	1157516	1153017	1147902	1142495	1136274	1128309	1120236	1114819
Fatalities per 100 000 population	13	11	13	11	10	11	10	9	9	9	10

The line diagram shows a tendency of decreasing number of fatalities in traffic accidents in both areas, the Republik of Srpska and Banja Luka. However, a certain unevenness in behavior by age is also observed. Continuity in the decline in traffic accidents is not observed, there is still a pronounced deviation in values by year.

DEMOGRAPHIC CHARACTERISTICS OF THE REPUBLIC OF SRPSKA

In addition to the large number of traffic fatalities, a problem that Republik of Srpska has been struggling with throughout its existence is the continuous deterioration of its demographic picture [4]. Demographic data, data on population movements and changes, have only been kept more precisely since 2013, when the first and only population census was conducted in the territory of the Republik of Srpska. In the first census, the Republik of Srpska had a total population of 1,171,179. According to the Statistical Office, the population has been decreasing year by year. Last year (2023), the Republik of Srpska had a total population of 1,114,819.

In a period of eleven years, the Republik of Srpska has lost 56,360 inhabitants, which means that is becoming poorer by about fifteen inhabitants every day.

Although there are no statistical data on the number and movement of the population, from the moment of the establishment of the Republik of Srpska until the first census, the fact is that in those years, especially the post-war years, a large number of residents left the Republik of Srpska. Mostly, entire families left, who, due to difficult living conditions and in search of a better existence, went to various parts of the world.

Unfortunately, the exodus of residents from the Republik of Srpska, especially young people, has not stopped even today. A large number of educated young people, lacking work or dissatisfied with their status, are leaving abroad. The Republik of Srpska is thus losing its most productive residents in various segments.

THE PUBLIC RISK IN THE REPUBLIC OF SRPSKA AND BANJA LUKA

Based on the collected data on traffic accidents and the severity of their consequences (MUP RS), and using data from the Statistical Office of the Republik of Srpska on the number of inhabitants, it is possible to compare their relationship. A table can be presented with an overview of the number of people killed in traffic accidents, the number of inhabitants, as well as the public risk, i.e. the number of fatalities per 100,000 inhabitants, in the period between 2013 and 2023. After the first population census in the Republik of Srpska, and therefore also in Banja Luka, it became possible to compare data at these two levels of observation. Since traffic accidents in Banja Luka represent the largest share of the total number of traffic accidents in the Republik of Srpska [5], their consequences should be analyzed in detail.

Data on the number of inhabitants, fatalities and public risk are provided separately for the Republik of Srpska (Table 2) and Banja Luka (Table 3).

In the past eleven years, the Republik of Srpska has recorded a decline in the number of inhabitants, the number of fatalities, and the number of fatalities per 100,000 inhabitants. In the first year, 2013, the highest number of fatalities per 100,000 inhabitants was recorded, and it decreased in the following years.

In 2013, it was recorded 13 fatalities per 100,000 inhabitants, and by 2023, this number had decreased to 10 fatalities per 100,000 inhabitants. The analyzed data indicate that the number of fatalities per 100,000 inhabitants in the Republik of Srpska is still above the European average (significantly less than 10 fatalities/100,000 inhabitants) [7], and that it has only come closer to it in the three penultimate years of observation [8].

As for Banja Luka, in the past eleven years, an increase in the number of inhabitants has been recorded, and as in the Republik of Srpska, a decrease in the total number fatalities and the number of fatalities per 100,000 inhabitants has been recorded.

In the first year of observation, 2013, the highest

Table 3. Data on the state of traffic safety in Banja Luka in the period 2013–2023

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fatalities BL	70	39	53	45	30	32	32	20	26	19	28
Population	180056	180961	181956	182848	183557	184257	184843	185094	185075	185177	185684
Fatalities per 100 000 population	39	22	29	25	16	17	17	11	14	10	15

number of fatalities per 100,000 inhabitants was recorded, while in the year before last, the lowest number of fatalities was recorded. In 2013, it was recorded 39 fatalities per 100,000 inhabitants, and by 2022, that number had decreased to 10 people fatalities per 100,000 inhabitants. However, the number of fatalities per 100,000 inhabitants in Banja Luka recorded an increase in fatalities in 2023. At that time, it was recorded 15 fatalities per 100,000 inhabitants, which is significantly higher than the European and national averages [8].

ANALYSIS OF DEMOGRAPHIC CHARACTERISTICS AND PUBLIC RISK

Demographic characteristics

Based on the collected data, different demographic characteristics are observed in the area of the Republik of Srpska and Banja Luka. The relationship between the population trends in the Republika Srpska and Banja Luka can be shown in a line diagram (Figure 2).

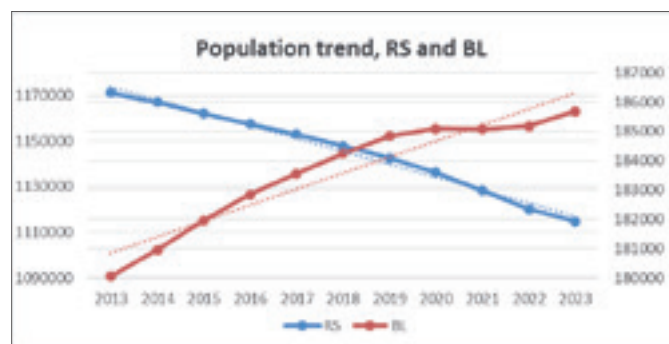


Figure 2: Overview of population in the Republik of Srpska and Banja Luka, 2013–2023

The line diagram shows the decreasing character of the curve showing the number of inhabitants in the Republik of Srpska and the opposite, increasing character of the curve showing the number of inhabitants in Banja Luka.

While the Republik of Srpska is struggling with the decrease in the number of inhabitants, Banja Luka is recording its increase. The decrease in the number of inhabitants in the Republik of Srpska has an almost linear character. The curve showing the increase in the number of inhabitants in Banja Luka initially has an approximately linear shape, but in recent years it has deviated from this and shown a downward bend, which indicates a smaller influx of inhabitants in those years.

Public risk comparison

One of the most relevant indicators of the security situation in an area is the number of fatalities per 100,000 inhabitants. The ratio of the number of fatalities per 100,000 inhabitants in the Republik of Srpska and Banja Luka can best be shown using a line diagram (Figure 3).

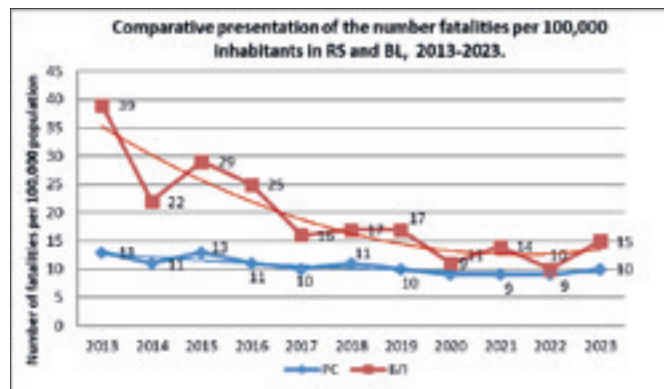


Figure 3. Overview of the number of fatalities per 100,000 inhabitants in RS and BL, period: 2013–2023.

The diagram shows a decreasing character of both lines. Regardless of the different behavior in terms of population in the Republik of Srpska and Banja Luka, a decrease in the number of fatalities in traffic accidents and the number of fatalities per 100,000 population was recorded at both levels.

Banja Luka, which at the beginning of the analyzed period (2013) had a very high number of fatalities per 100,000 inhabitants (39), has been recording a faster trend of decreasing this value. It could be said that some of the city's goals, planned by the development strategy, have been achieved [9]. However, it is noticeable that there is no continuity in the decrease of this value, where significant unevenness can be observed by year. In particular, the last year has recorded a deterioration of public risk in traffic, and 15 fatalities per 100,000 inhabitants have been recorded there.

The Republik of Srpska has lower values of public risk in traffic and a more pronounced continuity in the decline in the number of fatalities per 100,000 inhabitants.

CONCLUSION

The paper analyzes the behavior of traffic accidents, population movement, and the number of people killed in traffic accidents in the Republik of Srpska and Banja Luka area over the last eleven years.

During that period, the population was constantly decreasing in the Republik of Srpska and increasing in Banja Luka. In both areas of observation, there was an uneven trend in the number of traffic accidents, and a decrease in the number of people killed in them and the number of fatalities per 100,000 inhabitants.

Despite the increase in the level of traffic safety in the Republik of Srpska and Banja Luka, the situation is still not satisfactory. With an appropriate strategy and taking the necessary measures, at both levels of observation, the number of fatalities has decreased, but the set goals have not yet been achieved. The number of fatalities is still higher than the European average.

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Bezbjednost saobraćaja i demografske karakteristike Republike Srpske i Banje Luke

Apstrakt: Banja Luka i Republika Srpska, kao i većina svjetskih zemalja, bilježe veliki broj saobraćajnih nezgoda i lica poginulih u njima. Dodatno opterećenje Republike Srpske je njena loša demografska slika. Nakon popisa stanovništva, 2013. godine, u Republici Srpskoj je evidentno konstantno opadanje broja stanovnika. Banja Luka je u istom periodu bilježila porast broja stanovnika.

Rad obuhvata analizu bezbjednosti saobraćaja i demografskih karakteristika na području Republike Srpske i Banje Luke, te njihovo međusobno poređenje.

Ključne riječi: bezbjednost saobraćaja, poginula lica, broj stanovnika.