

METHODOLOGY FOR REDUCING ROAD TRAFFIC ACCIDENTS INVOLVING CHILDREN IN THE REPUBLIC OF UZBEKISTAN



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Abstract. Road traffic accidents (RTAs) involving children remain one of the most pressing road safety issues worldwide. This article examines the main causes of such accidents, analyzes existing approaches to risk reduction, and proposes effective methods for preventing child injuries on the roads.

Key words: children, road traffic accidents, prevention, road safety, infrastructure, education, supervision.

O'ZBEKISTON RESPUBLIKASIDA BOLALAR ISHTIROKIDAGI YO'L-TRANSPORT HODISALARINI KAMAYTIRISH METODOLOGIYASI

Annotatsiya. Bolalar ishtirokida sodir bo'layotgan yo'l-transport hodisalari (YTH) butun dunyoda yo'l harakati xavfsizligi sohasidagi dolzarb muammolardan biri bo'lib qolmoqda. Mazkur maqolada bunday hodisalarning asosiy sabablari ko'rib chiqiladi, mavjud tavakkalchilikni kamaytirishga qaratilgan yondashuvlar tahlil qilinadi, shuningdek, bolalarning yo'llarda jarohat olish holatlarining oldini olish bo'yicha samarali usullari taklifetiladi.

Kalit so'zlar: bolalar, yo'l-transport hodisalari, profilaktika, yo'l harakati xavfsizligi, infratuzilma, ta'lim, nazorat.

Children are one of the most vulnerable categories of road users. In the context of increasing motorization and urbanization, ensuring their safety on the roads becomes particularly urgent.

The methodology for reducing road traffic accidents involving children should take into account a comprehensive set of factors: behavioral, infrastructural, legal, and educational.

According to the World Health Organization, RTAs are among the top ten leading causes of death for children aged 5 to 14. Ensuring child safety on the roads requires a comprehensive approach, including legal, technical, infrastructural, and educational measures.

Despite positive developments in this area, it is necessary to implement targeted measures to prevent violations such as exceeding speed limits, ignoring traffic rules by road users – especially drivers – and demonstrative disregard for these rules.

In the effort to reduce child-involved accidents on public roads, public awareness campaigns and educational activities in mass media and popular social networks play a crucial role.

To prevent this problem, which poses a serious threat to the lives and health of minors, the

primary requirement is the development of effective mechanisms to ensure road traffic safety.

The issue of road traffic accidents involving children in the Republic of Uzbekistan is one of the priority areas of state policy in the field of road safety. The question of reducing child injuries on the roads is considered within the framework of a systemic approach, including legislative, infrastructural, educational, and preventive measures.

The main document defining the strategic direction of reforms in road safety is the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 732 dated 01.11.2024, “On Additional Measures to Ensure Road Traffic Safety.” This resolution pays particular attention to strengthening measures to protect children, the most vulnerable category of road users. The document provides for the implementation of modern control technologies, the improvement of infrastructure near schools, as well as the implementation of comprehensive preventive programs.

A significant amount of data and analytical material is also presented in the reports of the Ministry of Internal Affairs of the Republic of Uzbekistan. These reports provide a detailed analysis of the dynamics of RTAs involving minors from 2015 to 2024 and identify key causes of accidents: low driver discipline, inadequate organization of pedestrian crossings, and the absence of proper fencing and lighting near educational institutions. The reports emphasize the need for an interagency approach to addressing the problem, including the involvement of the Ministry of Public Education, the Ministry of Health, and local authorities.

Special attention is given to fostering a culture of safe behavior among children. In the methodological recommendations of the Ministry of Public Education of the Republic of Uzbekistan, models are proposed for integrating traffic rules education into the school curriculum starting from primary school. The effectiveness of interactive and game-based learning methods is particularly emphasized.

In the study by Yakubov U.B., a comprehensive assessment of the effectiveness of preventive measures to reduce child injuries is presented. The author demonstrates that the most sustainable effect is achieved by combining educational programs, infrastructural changes, and driver behavior control near educational institutions.

According to the Global Status Report on Road Safety 2023, countries that have implemented comprehensive safety programs have reduced child injuries by 35–40%. These figures confirm the need for integrated approaches in Uzbekistan.

Thus, the existing scientific and regulatory framework provides a solid foundation for developing a methodology aimed at systematically reducing child-involved RTAs in the country, taking into account national characteristics and successful international experience.

Despite government measures to ensure road safety, road traffic accidents (RTAs) involving children in Uzbekistan remain one of the most pressing problems. This is due to several factors:

- **Insufficient safety of road infrastructure**, especially near educational institutions: lack of illuminated pedestrian crossings, absence of fences, speed bumps, and traffic lights;
- **Low road literacy among children**, as well as among some parents and teachers, which reduces children's ability to adequately assess road risks;
- **Drivers' disregard for traffic rules**, particularly in areas near schools and kindergartens (speeding, failure to yield to pedestrians);
- **Absence of a systematic approach** to preventing and reducing RTAs involving minors: measures are fragmented and episodic;
- **Weak coordination** between government bodies, schools, and local communities, and the lack of a unified program for monitoring and evaluating children's road safety;

- Insufficient use of modern information technologies (video surveillance, navigation systems, mobile applications, etc.) in ensuring child road safety.

Thus, there is an urgent need in Uzbekistan to develop and implement a scientifically grounded, comprehensive methodology aimed at the systematic and sustainable reduction of child-involved RTAs, with a focus on prevention, education, infrastructural modernization, and digital control.

For the effective organization of road traffic and ensuring its safety, it is extremely important to develop road infrastructure in accordance with modern requirements, widely implement information and communication technologies in the sector, and use them efficiently. This will significantly increase the safety of all road users, including children. Today, this issue is one of the most urgent and pressing.

To achieve these goals, the Government of the country has repeatedly outlined targeted objectives and approved a number of regulatory documents defining priority development areas [1]. Currently, large-scale reforms are being implemented within the framework of the sector's prospective development.

For example, under the chairmanship of President Shavkat Mirziyoyev, a video conference was held on July 9, 2025, to discuss measures for ensuring road safety, improving infrastructure, and reducing traffic congestion.

In recent years, 61 trillion soms have been allocated for road construction and repair—3.5 times more than the funding levels before 2017.

The practice of automatic violation detection and decision-making using artificial intelligence has been introduced [2].

According to the results of a scientific research analysis conducted by the Road Traffic Safety Service of the Public Safety Department of the Ministry of Internal Affairs of the Republic of Uzbekistan, 46 accident-prone sites were identified across the country, 42 of which have already been eliminated. The causes of these sites were usually unlit pedestrian crossings, dangerous turns, and the absence of protective barriers on roads.

Additionally, the Center regularly conducts social surveys among the population to identify specific problems in this area and takes public opinion into account, based on which proposals are developed to address them in the future. The survey is conducted every six months jointly with the Institute of Criminological Research of the Ministry of Internal Affairs of Uzbekistan, and the results are immediately submitted to the Cabinet of Ministers of the Republic of Uzbekistan.

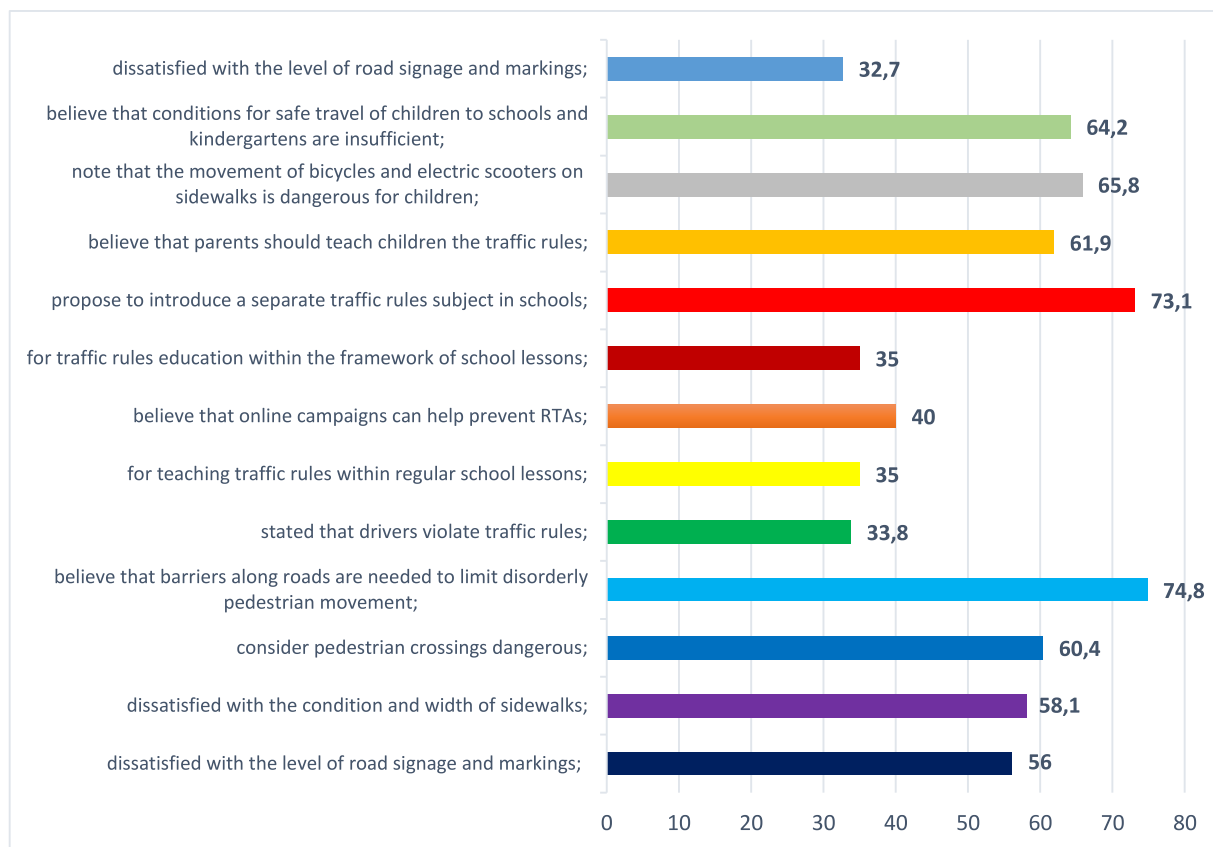
In the survey conducted over the past six months, a total of 260,810 respondents participated, including 227,485 men and 33,325 women.

The survey results are presented in the following diagram (Fig. 1).

Despite the country's policies aimed at ensuring road safety and the development of a regulatory and legal framework, the level of road traffic accidents involving minors remains alarming. Analysis shows that the causes of these incidents are both behavioral and infrastructural in nature. Below are the main factors contributing to traffic accidents involving children:

First, the insufficient protection of children as a vulnerable category of road users. Children, especially younger ones, have a limited ability to correctly assess traffic situations. Their attention, reaction, and behavioral characteristics do not always meet the requirements for safe movement. The lack of consistent traffic rule compliance skills makes them particularly vulnerable. Drivers, pedestrians, and passengers all play a key role in the occurrence of accidents.

Second, insufficient educational work with violators. In some cases, there is a lack of dialogue between local communities and traffic safety authorities regarding child safety.



for the period of the last 6 months of 2025

Fig. 1. Results of a social survey among citizens of Uzbekistan (in percentages)

Third, the use of sidewalks by cyclists and electric scooter riders. 65.8% of respondents note that cycling and riding e-scooters on sidewalks is dangerous for pedestrians, especially for children. In the absence of dedicated bike lanes, such situations often result in injuries.

Fourth, insufficient use of digital technologies and violation detection cameras. Although intelligent video surveillance systems are gradually being implemented in the country, territorial coverage is still insufficient. In areas without digital monitoring, more violations are recorded, including running red lights and speeding, particularly near schools.

Fifth, the psychological and emotional instability of children. The unpredictability of children's behavior is one of the most challenging problems in managing road safety. A child may suddenly run onto the roadway without realizing the consequences. This requires not only adult supervision but also the implementation of additional barriers (fences, ramps, traffic lights with audio signals, etc.).

Child road traffic injuries are an important and socially significant problem that requires a systematic approach. Considering that children are among the most vulnerable categories of road users, it is necessary to develop a comprehensive intersectoral methodology covering legal, educational, infrastructural, technological, and socio-cultural aspects [3].

The methodology is based on the following scientific approaches:

Systemic approach – considers traffic accidents as the result of the interaction of multiple factors, including driver behavior, infrastructure, education, and supervision.

Preventive approach – emphasizes prevention rather than addressing consequences.

Comprehensive interdisciplinary approach – combines the efforts of government authorities, educators, parents, law enforcement agencies, and civil society.

Digitalization and innovation – active implementation of ICT, Big Data, and analytical platforms for monitoring and managing risks [4].

All scientific aspects of the methodology for reducing traffic accidents involving children in the Republic of Uzbekistan are presented in Table 1.

Table 1

**Aspects of the Methodology for Reducing Traffic Accidents
Involving Children in the Republic of Uzbekistan**

№	Area of Intervention	Innovative Measure	Expected Effect
1	Infrastructure	Installation of “smart pedestrian crossings” (motion sensors, LED lighting, autonomous power supply)	Enhancing the visibility and safety of children on the roads
2	Education and Prevention	Introduction of a separate traffic rules subject in the school curriculum with VR-based road situation simulators	Conscious understanding of traffic rules by children, reducing behavioral mistakes
3	Technology and Enforcement	Use of GPS bracelets and mobile applications to monitor the movements of primary school children	Enhancing parental and school supervision of children’s movements
4	Parental Involvement	Mandatory traffic rules training for parents of first graders (digital courses with certification)	Fostering a family culture of road safety
5	Urban Environment	Organization of school “green corridors”: barriers, raised (speed) crossings, and bicycle lanes	Creating a safe and logical route network for children
6	Media and Social Networks	Large-scale Instagram campaign involving influencers and children: “Life is not on the road – life is in your hands!”	Increasing children’s and adolescents’ engagement in traffic rule compliance culture
7	Analytics and Monitoring	Creation of an interactive map of traffic accidents involving children with dynamic updates via the government platform	Identifying danger hotspots, prompt response, and intervention planning
8	Behavioral Psychology	Conducting regular psychological training on stress resilience and attentiveness for schoolchildren	Additional funding for targeted road safety measures
9	Business Partnerships	Engagement of car dealerships and insurance companies in the “1 Car – 1 Safety” campaign: donations for road signs	Additional funding for targeted road safety measures
10	Digitalization of Inspection	Pilot project “Child Traffic Inspector” — a gamified app where children report traffic violations	Developing responsibility and attentiveness in children

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Key Areas of Implementation

1. Development of the national program “Safe School – Safe Child,” covering:
 - Safety standards around all educational institutions;
 - Creation of traffic rules classrooms and training grounds;
 - Introduction of school safety inspectors.
2. Strengthening interagency cooperation between the Ministry of Internal Affairs, the Ministry of Preschool and School Education, the Ministry of Transport, local authorities, and authorized committees.
3. Parental involvement: conducting parent meetings and “Safe Parenting” schools.
4. Development of urban mobility: prioritizing pedestrian and bicycle infrastructure, implementing the “City for Children” concept [5].

Expected Results:

- Reduction of traffic accidents involving children by 30–50% over 5 years;

- Increase in legal awareness among children and adolescents;
- Strengthening public trust in government safety measures;
- Improvement of quality of life in cities and rural areas.

A comprehensive methodology for reducing traffic accidents involving children requires a systemic approach and continuous coordination between government agencies, educational institutions, society, and the road users themselves.

The implementation of modern technologies, legal mechanisms, and educational initiatives can significantly reduce the number of tragic incidents and create a safe transport environment for the younger generation.

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