



Eastern Partnership
ROAD SAFETY OBSERVATORY



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ROAD SAFETY PERFORMANCE INDEX

FOR EASTERN PARTNERSHIP COUNTRIES 2024

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DISCLAIMER

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INTRODUCTION

Despite recent efforts to improve road safety management, the Eastern Partnership (EaP) region, comprising Georgia, Armenia, Azerbaijan, Ukraine, and Moldova, continues to experience substantially higher road traffic fatality rates than European countries. These outcomes reflect a complex interaction of behavioral, infrastructural, institutional, and socio-economic factors. While fatality and injury rates are valuable outcome measures, they alone cannot identify the reason why road safety outcomes vary, or which areas require policy attention.

To bridge this information gap, Safety Performance Indicators (SPIs) have emerged as essential complementary tools. Rather than measuring outcomes, SPIs assess risk factors and system characteristics that influence crash occurrence and severity. Building upon this concept, the European research community, most notably Hermans, Brijs, and Wets (2009), developed a Road Safety Performance Index (RSPI) that combined multiple SPIs into a composite measure, allowing for benchmarking and communication of overall road safety performance across European countries. That methodology demonstrated that, when carefully designed, an index can synthesize complex and multidimensional safety information into a form that supports evidence-based policymaking.

The study aims to replicate this methodological approach for the five Eastern Partnership countries. Specifically, it adapts the Road Safety Performance Index construction process to the regional context and available data. In doing so, it will generate a comparable index for cross-country benchmarking, trend monitoring, and strategic planning, helping these countries align with the EU's Vision Zero and the UN Decade of Action for Road Safety 2021-2030.



OBJECTIVES

The main goal of this study is to construct a scientifically sound, data-driven Eastern Partnership Road Safety Performance Index (EaP RSP Index) for Georgia, Armenia, Azerbaijan, Ukraine, and Moldova. Specific objectives include:

1. Adapting an established index methodology - Hermans, Brijs & Wets (2009) - to EaP-specific data constraints.
2. Compiling and harmonizing a set of safety performance indicators across exposure, crashes and outcomes, risk factors, system performance and governance, and socio-economic and contextual domains.
3. Construct a composite index to compare performance and identify priority areas for intervention.

Overall, the EaP RSP Index provides a comparable and policy-relevant tool to benchmark countries, enable cross-country comparability, and support evidence-based road safety decision-making in the EaP region.

CONCEPTUAL FRAMEWORK AND METHODOLOGICAL APPROACH

The study is based on the principle that road safety is a multidimensional concept that cannot be adequately captured by a single indicator. Instead, it reflects the combined influence of exposure, crash outcomes, behavioral risk factors, system performance and governance, and broader socio-economic and contextual conditions.

Building on this conceptual framework, the EaP Road Safety Performance Index combines five core domains: (1) Exposure, (2) Crash and Outcome, (3) Risk Factor, (4) System Performance and Governance, and (5) Socio-economic and Contextual. Each domain comprises a set of indicators (28 indicators in total):

1. **Exposure domain:** motorization rate, road network density and number of licensed drivers.
2. **Crash and outcome domain:** number of road crashes, number of road traffic deaths, number of seriously injured persons, share of vulnerable road users in road traffic deaths and injuries, share of road traffic deaths and injuries among children.
3. **Risk factor domain:** seatbelt wearing rates among drivers, speed-related crash contribution, share of alcohol-related crashes, maximum speed limits by road type (urban, rural, motorway) and share of vehicles older than 10 years.
4. **System performance and governance domain:** vehicle safety standards (import regulations and periodic maintenance), road infrastructure safety (proxy indicators such as total scores for road safety impact assessments (RSIA)), emergency response capacity, adoption of UN road safety conventions, enforcement of key traffic laws, existence of point-based penalty system, existence of national road safety strategy, and road infrastructure funding as a share of GDP.
5. **Socio-economic & contextual domain:** number of active civil society organizations working on road safety issues, urbanization and health system capacity (approximated by the current health expenditure per capita, PPP (current international \$)).

The EaP RSP Index is developed using the multi-stage composite index construction methodology proposed by Hermans et al. (2009). The methodology comprises the following phases:

1. **Selection, acquisition and processing of indicators** - data collection focuses on the most recent period (2024), ensuring maximum comparability across the five Eastern Partnership countries. Given differences in national reporting practices, a key component of this phase involves data harmonization, including the reconciliation of definitions, units of measurement, and data collection methodologies to enable valid cross-country comparisons. The index draws on a combination of national and international data sources. National data is obtained from statistical offices, ministries responsible for transport and road safety, ministries of internal affairs, police authorities, vehicle registration agencies, and other government institutions. International sources include the World Health Organization (WHO), the World Bank, the United Nations Economic Commission for Europe (UNECE), the Asian Transport Observatory, the Global Alliance of NGOs for Road Safety, and official United Nations treaty databases. Additional information is collected from official government legislation, national road safety strategies, government budget documents, and specialized national datasets, such as seat belt use surveys and vehicle fleet statistics. Following data collection, the datasets are subjected to comprehensive cleaning, validation, and consistency checks. Where data gaps exist, missing values are addressed using statistical imputation techniques where appropriate, while proxy indicators are employed when direct measures are unavailable to ensure comprehensive representation across all five domains of the EaP RSP Index.

2. **Construction of EaP Road Safety Performance Index** - this phase entails the following steps: (1) normalizing the indicators/variables to a uniform scale unit; (2) assigning weights to each indicator/variable within each pillar (developing a weighting mechanism, where indicators will be aggregated at domain level using weighted arithmetic mean, with the equal weights) and domains are aggregated using the arithmetic mean and weighted equally. The EaP Road Safety Performance Index evaluates how EaP countries perform in terms of road safety. Each country receives a score ranging from 0 to 100, with values closer to 100 indicating better road safety performance and values closer to 0 reflecting poorer road safety outcomes. The resulting EaP RSP Index score for each country will therefore reward consistency and penalize serious weaknesses.

Core Domain 1: Exposure (weight: 20% of total)

INDICATOR	SOURCE
Motorization rate (Number of motor vehicles per 1,000 population)	Statistical Committee of the Republic of Armenia (Armstat) State Statistical Committee of the Republic of Azerbaijan (Azerstat) National Statistics Office of Georgia (Geostat) National Bureau of Statistics of the Republic of Moldova (NBS Moldova) Ministry for Development of Communities and Territories of Ukraine
Road Network Density (km per km ² of land area)	Armstat Azerstat Geostat NBS Moldova Ministry for Development of Communities and Territories of Ukraine
Number of licensed drivers per 1,000 population	Ministry of Internal Affairs of the Republic of Armenia Azerstat Geostat Public Services Agency Moldova Service Centers of the Ministry of Internal Affairs of Ukraine

Core Domain 2: Crash and Outcome (weight: 20% of total)

INDICATOR	SOURCE
Number of road crashes per 100,000 population	Azerstat Armstat Ministry of Internal Affairs of Georgia NBS Moldova, General Police Inspectorate of the Republic of Moldova (Ministry of Internal Affairs) Patrol Police of Ukraine

Number of road traffic deaths per 100,000 population	Azerstat Armstat Ministry of Internal Affairs of Georgia NBS Moldova, General Police Inspectorate of the Republic of Moldova (Ministry of Internal Affairs) Patrol Police of Ukraine
Number of seriously injured people per 100,000 population	Azerstat Armstat Ministry of Internal Affairs of Georgia NBS Moldova, General Police Inspectorate of the Republic of Moldova (Ministry of Internal Affairs) Patrol Police of Ukraine
Share of vulnerable road users (Cyclists & Pedestrians) in road traffic deaths (%)	WB Road Safety Country Profile, Armenia, 2024 Azerstat WHO Global status report on road safety 2023 Azerbaijan Ministry of Internal Affairs of Georgia WB Road Safety Country Profile, Moldova, 2024 Patrol Police of Ukraine
Share of vulnerable road users (Cyclists & Pedestrians) in road traffic injuries (%)	WB Road Safety Country Profile, Armenia, 2024 Azerstat WHO Global status report on road safety 2023 Azerbaijan Ministry of Internal Affairs of Georgia WB Road Safety Country Profile, Moldova, 2024 Patrol Police of Ukraine
Share of road traffic deaths among children (%)	WB Road Safety Country Profile, Armenia, 2024 Azerstat Ministry of Internal Affairs of Georgia NBS Moldova Patrol Police of Ukraine

Share of road traffic injuries among children (%)	WB Road Safety Country Profile, Armenia, 2024 Azerstat Ministry of Internal Affairs of Georgia NBS Moldova Patrol Police of Ukraine
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Core Domain 3: Risk Factor (weight: 20% of total)

INDICATOR	SOURCE
Seatbelt wearing rates among drivers %	WHO Seat Belt Use Survey Ukraine, 2024
Speed-related crash contribution %	Asian transport observatory Ministry of Internal Affairs of Georgia Ministry of Internal Affairs of the Republic of Moldova Patrol Police of Ukraine
Share of alcohol-related crashes	Asian transport observatory Azerstat Ministry of Internal Affairs of Georgia Ministry of Internal Affairs of the Republic of Moldova Patrol Police of Ukraine
Maximum speed limits by road type (km/h) (urban, rural, motorway)	WHO Global status reports
Share of vehicles older than 10 years	Azerstat Armstat Geostat UNECE Transport Statistics Automotive Market Research Institute



Core Domain 4: System Performance and Governance (weight: 20% of total)

INDICATOR	SOURCE
Vehicle safety standards (Import Regulations and Periodic Maintenance)	WB Road Safety County Profiles, 2024
Road infrastructure safety (Total Scores for Road Safety Impact Assessments (RSIA))	WB Road Safety County Profiles, 2024
Emergency response capacity	WB EaP Road Safety County Profiles, 2024 World Health Organization Ministry of Health of Ukraine
Adoption of UN road safety conventions	Official UNTC status page ✓ Convention on Road Traffic (1968) ✓ European Agreement concerning the Work of Crews of Vehicles Engaged in International Road Transport (AETR) ✓ 1958 Agreement on UN vehicle regulations ✓ Convention on Road Signs and Signals (1968) ✓ ADR – Agreement concerning the International Carriage of Dangerous Goods by Road ✓ 1997 Agreement on Periodical Technical Inspections ✓ 1998 Agreement on Global Technical Regulations
Enforcement of key traffic laws	WHO country profiles ✓ Speed law ✓ Drink-driving law ✓ Helmet law ✓ Seat-belt law ✓ Child-restraint law



Existence of point-based penalty system	Official National Road Traffic Legislation and Government Portals
Existence of national road safety strategy	WB Road Safety Country Profiles, 2024 Ukraine: Government portal
Road infrastructure funding as a share of GDP	Official country budgets

Core Domain 5: Socio-economic & Contextual (weight: 20% of total)

INDICATOR	SOURCE
Number of active civil society organizations working on road safety issues	Global Alliance of NGOs for Road Safety
Urbanization	World bank
Health system capacity approximated by the current health expenditure per capita, PPP (current international \$)	World bank



EXPECTED OUTCOMES

The Road Safety Performance Index provides several important analytical outputs and practical contributions:

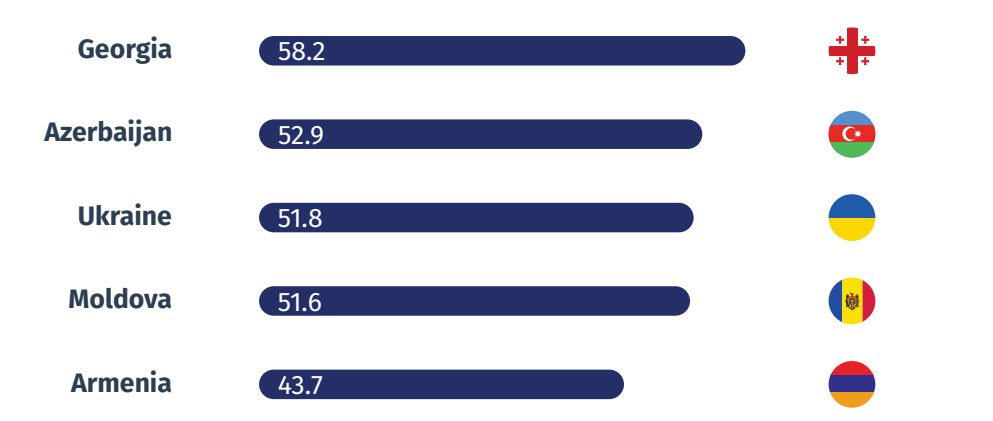
1. A composite Road Safety Performance Index for the five Eastern Partnership countries, allowing for quantitative benchmarking of overall performance.
2. Country-specific SPI profiles, showing strengths and weaknesses across various domains such as exposure, crash and outcome, risk factors, system performance, institutional and policy, and socio-economic and contextual data.
3. A methodological blueprint adaptable for future monitoring and expansion within a regional observatory framework.
4. Comparative insights into how data limitations, institutional strength, and enforcement practices shape road safety outcomes in the EaP region

The EaP Road Safety Performance Index provides a single, interpretable measure of overall road safety performance for each country while also allowing results to be disaggregated by domain. This enables policymakers to identify strengths and weaknesses across specific areas and prioritize targeted interventions where improvements are most needed.

THE EAP ROAD SAFETY PERFORMANCE INDEX RESULTS

The Road Safety Performance Index measures and compares overall road safety performance across the five Eastern Partnership countries by integrating 28 indicators grouped into five domains: Exposure, Crash and Outcome, Risk Factor, System Performance and Governance, and Socio-economic and Contextual. The 2024 RSP Index scores range from 58.2 for Georgia, the highest-performing country, to 43.7 for Armenia, the lowest-performing country. The remaining three countries, Azerbaijan (52.9), Ukraine (51.8), and Moldova (51.6), are closely clustered in terms of their overall RSP Index scores, although the underlying domain scores differ substantially.

Figure 1. Road Safety Performance Index across Eastern Partnership Countries, 2024



COUNTRY-LEVEL RESULTS

Georgia ranks first with an overall score of 58.2, outperforming the other countries primarily due to exceptionally strong performance in the Risk Factor domain (87.1), supported by high scores in System Performance and Governance (73.3). These results reflect comparatively stronger road safety legislation, governance arrangements, and behavioral risk management. Nevertheless, Georgia records comparatively weaker performance in the Exposure (40.2) and Crash and Outcome (40.9) domains, indicating that favorable institutional conditions have not yet translated into equally strong safety outcomes.

Azerbaijan ranks second with 52.9 points. Its strongest performance is observed in System Performance and Governance (68.0), followed by Risk Factors (65.6). However, the country records the lowest score among all five countries in the Socio-economic and Contextual domain (14.0), suggesting that broader contextual conditions remain a significant challenge despite relatively strong institutional performance.

Ukraine ranks third with 51.8 points and demonstrates the most balanced performance across domains. It records the highest score in the Exposure domain (62.4) and performs relatively well in Crash and Outcome (61.1). However, lower scores in System Performance and Governance (43.7) and Socio-economic and Contextual factors (45.8) reduce its overall index value.

Moldova ranks fourth with an overall score of 51.6, only marginally below Ukraine. The country performs particularly well in the Socio-economic and Contextual domain (72.7), the highest score among all countries, while performing comparatively well in Crash and Outcome (56.3) and Risk Factors (52.7). Its weakest area is Exposure (32.4), driven primarily by the country's relatively high motorization rate and number of licensed drivers per capita, indicators that are negatively oriented in the index because they represent greater exposure to road traffic risk.

Armenia records the lowest overall score (43.7). While the country performs reasonably well in System Performance and Governance (47.7), its relatively low scores in Crash and Outcome (42.6), Risk Factors (43.2), and particularly Socio-economic and Contextual factors (38.1) contribute to its lower overall ranking.

Table 1. Road safety Performance Index Domain-Level Results by Country, 2024

COUNTRY	RANK	INDEX	EXPOSURE	CRASH & OUTCOME	RISK FACTOR	SYSTEM PERFORMANCE & GOVERNANCE	SOCIO-ECONOMIC & CONTEXTUAL
Georgia	1	58.2	40.2	40.9	87.1	73.3	49.5
Azerbaijan	2	52.9	59.6	57.1	65.6	68.0	14.0
Ukraine	3	51.8	62.4	61.1	46.2	43.7	45.8
Moldova	4	51.6	32.4	56.3	52.7	44.1	72.7
Armenia	8	43.7	46.8	42.6	43.2	47.7	38.1

Table 2. Highest and lowest scoring RSP Index domains within each country, 2024

COUNTRY	BEST-PERFORMING DOMAIN	LOWEST-PERFORMING DOMAIN
Georgia	Risk Factor (87.1)	Exposure (40.2)
Azerbaijan	System Performance and Governance (68.0)	Socio-economic and Contextual (14.0)
Ukraine	Exposure (62.4)	System Performance and Governance (43.7)
Moldova	Socio-economic and Contextual (72.7)	Exposure (32.4)
Armenia	System Performance and Governance (47.7)	Socio-economic and Contextual (38.1)



DOMAIN-LEVEL FINDINGS

The domain-level results further demonstrate that road safety performance across the Eastern Partnership countries is highly multidimensional. Although Georgia achieves the highest overall Road Safety Performance Index score, it does not lead across all domains. Similarly, countries with comparable overall index scores exhibit distinct strengths and weaknesses, highlighting the importance of assessing road safety performance beyond a single composite measure.

The Exposure domain is led by Ukraine (62.4), while Moldova (32.4) records the lowest score. In contrast, Ukraine also achieves the highest score in the Crash and Outcome domain (61.1), whereas Georgia (40.9) records the lowest score despite ranking first overall. This finding suggests that strong performance in institutional or behavioral domains does not necessarily translate into the best road safety outcomes.

The Risk Factor domain exhibits one of the greatest variations across countries, ranging from 43.2 in Armenia to 87.1 in Georgia, reflecting substantial differences in behavioral risk factors. Similarly, System Performance and Governance show considerable disparities, with Georgia (73.3) and Azerbaijan (68.0) outperforming the remaining countries, while Ukraine (43.7) records the lowest score.

The Socio-economic and Contextual domain also displays pronounced differences across countries. Moldova records the highest score (72.7), reflecting favorable contextual conditions captured by this domain, whereas Azerbaijan (14.0) records the lowest score.



COUNTRY	HIGHEST-PERFORMING COUNTRY	LOWEST-PERFORMING COUNTRY
Exposure	Ukraine (62.4)	Moldova (32.4)
Crash & Outcome	Ukraine (61.1)	Georgia (40.9)
Risk Factors	Georgia (87.1)	Armenia (43.2)
System Performance & Governance	Georgia (73.3)	Ukraine (43.7)
Socio-economic & Contextual	Moldova (72.7)	Azerbaijan (14.0)

Overall, the EaP RSP Index confirms that road safety performance across the Eastern Partnership countries is uneven and multidimensional. No country consistently outperforms the others across all domains, and strengths in one area are often accompanied by weaknesses in another. These findings demonstrate that improving road safety requires coordinated action across multiple dimensions, including exposure, behavioral risk factors, governance, and socio-economic conditions, rather than focusing on a single aspect of the road safety system. Consequently, the RSP Index provides a valuable framework for benchmarking country performance, identifying priority areas for intervention, and supporting evidence-based road safety policymaking.

CONCLUSIONS: WHAT IS NEXT?

The EaP Road Safety Performance Index provides a comprehensive framework for benchmarking road safety performance - The EaP RSP Index is the first comprehensive framework for systematically assessing road safety performance across the EaP countries. By integrating 28 indicators across five domains, the Index moves beyond traditional outcome measures and provides a multidimensional assessment of road safety. The baseline results reveal substantial differences in countries' performance across domains, demonstrating that strong performance in one area does not necessarily translate into better overall road safety outcomes. The EaP RSP Index enables policymakers to identify country-specific strengths and weaknesses, prioritize interventions, and monitor progress over time.

Annual publication and continuous monitoring - The EaP RSP Index is intended to become a regularly updated benchmarking tool for the Eastern Partnership Road Safety Observatory. Annual publication of the Index will establish a consistent time series for monitoring changes in road safety performance and supporting evidence-based decision-making at both national and regional levels.

Further strengthening the Index - As data availability and quality improve across the region, the indicator set can be expanded to better capture key dimensions of road safety, particularly behavioral risk factors, vehicle safety, infrastructure quality, post-crash care, and institutional performance. The Eastern Partnership Road Safety Observatory will continue working with member countries to support the implementation of CAdAS and Mini-CAdAS standards, while strengthening standardized data collection, reporting practices, and institutional capacity. These efforts will improve the quality, harmonization, and comparability of road safety data across the region, further enhancing the robustness and policy relevance of the Index.

Strengthening regional cooperation and policy dialogue - The EaP RSP Index provides a common evidence base for dialogue among Eastern Partnership countries. By identifying priority areas for improvement and enabling cross-country benchmarking, the Index can facilitate cooperation between national road safety authorities and development partners, helping translate analytical findings into targeted policy actions that contribute to safer road transport systems across the region.

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ABOUT THE EASTERN PARTNERSHIP ROAD SAFETY OBSERVATORY

The Eastern Partnership Road Safety Observatory (EaP RSO) is a joint initiative of the five Eastern Partnership countries – Armenia, Azerbaijan, Georgia, Moldova, Ukraine – with the common goal of reducing road casualties by 50% by 2030. Our mission is to contribute to reducing road casualties through improving the quality of systematic and consolidated data collection, management and analysis on road traffic deaths and serious injuries in line with best EU and international practices and capacity building of national counterparts in improved data practices and application to policy development. At its core, the EaP RSO operates as more than just a data repository – it functions as a comprehensive platform that fosters the sharing of good practices, facilitates evidence-based policy development, and promotes regional coordination in road safety management.

The observatory focuses on five key components: Road Safety Data, Knowledge, Resources, Tools, and Network development, working to standardise data collection based on CADaS and MiniCADaS protocols while building capacity across all partner countries. Through targeted training programmes, technical assistance, and stakeholder engagement involving government agencies, civil society organisations, and vulnerable road user groups, the EaP RSO creates a solid foundation for evidence-based road safety interventions that will ultimately save lives and reduce the devastating economic and social costs of road traffic crashes across the Eastern Partnership region.

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