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# Strategic Recommendations For Road Safety Public Policy: A Literature Review

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***Abstract***
*This study analyzes the effectiveness of public policies aimed at improving road safety by evaluating their capacity to reduce traffic accidents through regulatory, educational, and urban governance approaches. Based on a literature review, quantitative, qualitative, mixed-method, and review studies published between 2019 and 2025 in the Scopus and SciELO databases were examined. After applying specific inclusion and exclusion criteria, 29 publications were selected, highlighting the importance of institutional planning, road safety education, and policy monitoring to mitigate traffic accidents. The results show that combining updated regulatory frameworks, awareness campaigns, and technological enforcement systems significantly contributes to reducing road deaths and injuries. It is concluded that integrated, evidence-based public policies with active citizen participation offer an effective, adaptable, and sustainable path to strengthening road safety, especially in urban contexts across Latin America.*
***Keywords****: prevention, regulation, road safety education****.***

## INTRODUCTION

Ineffective enforcement of road safety laws has been shown to have a direct impact on the frequency of road accidents and on the culture of mobility in several countries (World Health Organization, 2023a). It has been found that, in regions where regulations are lax, infractions such as speeding, cell phone use while driving, or driving under the influence of alcohol are significantly more frequent, contributing to a high accident rate. According to the European Commission (2024), in contrast, countries with strict legal frameworks, constant vigilance, and severe penalties have managed to substantially reduce accidents and improve road discipline.

Thus, rigorous compliance with road regulations emerges as a determining factor in ensuring the safety of pedestrians and drivers (Regional Office for Africa, 2024). This compliance depends not only on the legal design, but also on citizen education, effective control and institutional coherence. In addition, the International Transport Forum (2023) highlights that the implementation of technologies such as surveillance cameras, smart radars and points systems in licenses has proven to be useful in contexts where traffic is usually chaotic. It is therefore essential to continue promoting legislative reforms, awareness-raising campaigns and more efficient control mechanisms. The European Transport Safety Council (2024) emphasises that building a culture of respect for road rules therefore represents a key tool for reducing accidents and transforming urban order for the benefit of health and life.

Globally, road safety continues to be a high-priority issue, due to the persistent ineffectiveness of traffic laws in multiple contexts (World Health Organization, 2023a). It is estimated that more than 1.2 million people die each year in road accidents, with the majority attributable to offences such as speeding, driving under the influence and mobile phone misuse. The European Commission (2024) highlights that countries with strict legislation, such as the Scandinavian countries or Japan, have road fatality rates of less than 5 per 100 thousand inhabitants. In contrast, Regional Office for Africa (2024)

It warns that nations with lax regulations and deficient oversight exceed 25 deaths per 100,000, reflecting the direct relationship between legal rigor and the reduction of claims. In addition, the International Transport Forum (2023) reveals that these differences reflect not only the regulatory structure, but also the political will and operational capacity of control systems. The European Transport Safety Council (2024) argues that, without effective legislation accompanied by oversight mechanisms and citizen culture, progress in road safety will continue to be insufficient.

In Latin America, the outlook is alarming due to institutional weakness in the implementation of road rules and the low culture of citizen compliance (World Health Organization, 2023b). The region reports an average rate of 17 deaths per 100,000 inhabitants, well above international standards. Global Alliance of NGOs for Road Safety (2022) indicates that it is estimated that 60% of drivers violate at least one road rule weekly, and only 35% of the fines issued are actually paid. The Pan American Health Organization (2025) warns that this structural impunity, coupled with informal transport systems and poor road safety education, generates chaotic urban environments, with high accident rates, prolonged congestion, and high social and economic costs. Economic Commission for Latin America and the Caribbean (2024) states that the absence of coherent safe mobility policies further weakens the response capacity of governments.

In Peru, the problem of road safety manifests itself in critical indicators (Ministry of Transport and Communications of Peru, 2023). The country registers an approximate rate of 13 deaths per 100,000 inhabitants due to traffic accidents, with a clear concentration in urban areas. Peru's National Road Safety Observatory (2024) reports that 72% of drivers have committed violations during the last year, and only 38% of the fines imposed are carried out. The Ministry of Transport and Communications of Peru (2024) warns that the lack of effective control, corruption in sanctioning processes and insufficient road safety education aggravate this situation. Congress of the Republic of Peru (2023) points out that, in addition, the outdated vehicle fleet and poor road planning contribute to disorder and a generalized perception of impunity in law enforcement.

This research is justified by the growing global concern regarding the effectiveness of road safety laws and the low level of compliance by citizens. Despite regulatory advances in many countries, high rates of road accidents persist due to non-observance of basic rules such as respect for speed limits, the use of seat belts and driving under the influence of substances. This problem is aggravated in regions where legislation is not rigorous, sanctions are lax or its application is deficient, generating contexts of high permissiveness and vehicular chaos. On the contrary, countries with stricter legal systems, efficient oversight and sustained educational campaigns have managed to significantly reduce the numbers of accidents and deaths on the road. Analysing these differences makes it possible to identify the critical factors that affect the effectiveness of road regulations and to propose more coherent and preventive governance models. The relevance of the study is based on the need to promote a culture of respect for traffic laws, improve citizen safety, and contribute to more comprehensive public policies, based on evidence and with an international comparative approach.

Road safety laws, despite their existence in most countries, face serious deficiencies in their application and enforcement. In many regions, offences such as speeding, driving under the influence or failure to wear seat belts are common due to weak enforcement and perceived impunity. While countries with strict regulations and efficient control systems, such as Sweden or Japan, report low accident rates, other nations with poor road order, such as some in Latin America and Southeast Asia, show high accident rates. This disparity reveals the urgent need for coherent, enforceable regulatory frameworks accompanied by a solid civic culture. Therefore, the objective of this research is to examine the effectiveness of public policies in improving the quality of life.

road safety, considering its ability to reduce the accident rate through regulatory, educational and urban governance approaches.

## THEORETICAL FOUNDATION

The Theory of Public Policy at the level of government is based on the contributions of Harold Lasswell, considered the founding father of public policy analysis in the twentieth century (Linquiti, 2024). Their approach emerged in a context marked by the post-war period, the growth of the modern state, and the need for analytical tools for more rational, efficient, and evidence-based decision-making (St. Denny & Zittoun, 2024). From this perspective, public policies are understood as a deliberate and structured process by which governments identify social problems, formulate solutions, and implement them through regulatory frameworks, programs, or concrete actions (Qawasmeh, 2022). This theory recognizes that policy design is not an isolated act, but a cycle that includes multiple phases: problem identification, formulation, adoption, implementation, evaluation, and feedback (Torgerson, 2024). Thus, the State acts as a planning agent that responds to collective demands and seeks to guarantee public welfare through informed and strategic decisions (Boossabong, 2025).

Along the same lines, the theory also emphasizes the importance of the actors involved in the process of policy formulation and implementation, including not only the central government, but also subnational governments, multilateral organizations, civil society, and the private sector (Linquiti, 2024). Government decisions, therefore, do not arise in a technical vacuum, but in a complex network of interests, values, institutional capacities, and economic constraints (St. Denny & Zittoun, 2024). This perspective is crucial for analysing the design and impact of educational, health or technological policies, especially in contexts of uneven development such as Latin America (Qawasmeh, 2022). Public Policy Theory allows us to understand why certain government initiatives manage to transform social realities while others fail or deviate from their objectives (Torgerson, 2024). It offers an essential analytical framework for assessing the coherence, relevance, and effectiveness of state decisions, as well as for proposing improvements based on empirical evidence and democratic participation (Boossabong, 2025).

Public policies are a fundamental instrument through which the State guides, organizes, and regulates collective action based on the general interest (Aguinis et al., 2023). They are understood as a systematic set of decisions, strategies, and interventions aimed at solving public problems, through processes that involve both government institutions and civil society actors (Mahardhani, 2023). These policies are the result of complex processes of diagnosis, deliberation, formulation, execution, and evaluation, which seek to guarantee social well-being, equity, and sustainability (Hendren et al., 2023). The design of effective public policies requires a comprehensive understanding of social, economic, and territorial dynamics, as well as a technical and political capacity to transform social demands into concrete and sustained actions over time (Peng & Tao, 2022).

In this context, public policies are classified into various areas of intervention, such as health, education, employment, environment, transport or security, the latter being of special importance in urbanized and growing societies (Aguinis et al., 2023). An effective public policy is characterized by its relevance, internal coherence, operational viability, and ability to adapt to structural or short-term changes (Mahardhani, 2023). Likewise, citizen participation and intersectorality are key elements to strengthen the legitimacy and effectiveness of these actions (Hendren et al., 2023). Through appropriate regulatory frameworks, strategic planning, and rational allocation of resources, public policies make it possible to address complex problems in an articulated manner, integrating preventive, corrective, and evaluative dimensions that ensure their long-term positive impact (Peng & Tao, 2022).

Within this framework of action, road safety represents one of the most critical and sensitive areas within contemporary public policies (Sohail et al., 2023). It refers to the set of actions, regulations, and infrastructures aimed at preventing traffic accidents and mitigating their consequences on public health, the economy, and quality of life (Berhanu et al., 2023). The

The World Health Organization has pointed out that road accidents are one of the main causes of death in the young population, which shows the urgency of designing specific, integrated, and evidence-based public policies (Babić´ et al., 2022). These must consider aspects such as safe urban design, effective control of compliance with traffic rules, citizenship training from an early age, and the articulation of institutional actors at all levels of government (McCarty & Kim, 2024). Zhao et al. (2022) argue that road safety cannot be addressed as an isolated phenomenon, but as a multidimensional problem that requires coherent, coordinated, and sustained public policies. The articulation between these two variables – public policies and road safety – is vital to build safer urban environments, reduce accidents, protect human life and move towards inclusive, sustainable development models focused on people's dignity.

Contemporary analysis of road safety shows a progressive shift from traditional approaches to comprehensive and systematic strategies. Ehsani et al. (2023) argue that the Safe Systems approach, aimed at redesigning transportation systems to eliminate human error and reduce the consequences of accidents, is key to addressing inequalities and rising mortality rates from road accidents, especially in the United States, where 42,915 deaths were recorded in 2021. This approach proposes a transition towards sustainable modes such as walking and public transport, in response to the inefficiency of conventional solutions based on individual responsibility.

In Europe, the implementation of rigorous regulatory frameworks has proven to be effective. Vaiana et al. (2021) state that the implementation of road safety inspections (IHR) under Directive 2019/1936/EC makes it possible to detect infrastructural deficiencies with a significant impact on the frequency and severity of accidents. They identified, through statistical analysis, that variables such as the lack of signage and the high density of vehicular accesses correlate with a higher accident rate. They propose predictive models based on the AIC criterion to prioritize interventions, maximizing the efficiency of public spending on road safety.

On the other hand, Borucka and Sobecki (2023) incorporate the normative dimension when analysing the effect of legislative changes on the accident rate. Using a multiple regression model, they found that legal modifications—such as lowering legal blood alcohol limits or making seat belts mandatory—significantly affect the frequency of accidents. This approach makes it possible to demonstrate the value of public policies in specific contexts and highlights the need to integrate political and socioeconomic factors into predictive road safety models.

Studies with a global focus reveal notable inequalities in the production and application of knowledge. Goel et al. (2024) argue that 96% of the evidence on road interventions comes from high-income countries, leaving low- and middle-income nations behind (only 1.4% of studies). In this context, Regmi (2021) examines the case of Asia, where 60% of global road deaths occur. He affirms that factors such as the lack of reliable data, the lack of protection of vulnerable users and low institutional capacity limit progress. It proposes low-cost interventions and articulated governance as priority strategies to improve results in the region.

## METHOD

This study was developed through a bibliographic review of the literature, which allowed analyzing the effectiveness of public policies aimed at road safety, considering studies published in the period 2019–2025.

### Search strategy

The searches were carried out in the Scopus and SciELO databases, selected for their relevance and coverage in studies on transport, urban mobility, public policies and road safety. Key terms were used in Spanish and English:

- *"prevention", "regulation", "road safety education", "regulation", "prevention"* These terms were combined using Boolean operators AND and OR, generating search strings such as:
- "prevention" AND "regulation" AND "road safety education"
- "prevention" OR "regulation" OR "road safety education"
- "road safety education" AND "regulation" AND "prevention"
- "road safety" OR "traffic regulation" AND "education"

In addition, filters were applied by language (Spanish and English) and by type of document (peer-reviewed articles), with the aim of ensuring the quality of the evidence.

**Study selection process**

In the identification phase, 208 records were recovered (Scopus: 132; SciELO: 76). After the elimination of 21 duplicates, 187 articles were evaluated in the screening by title and abstract, excluding 111 records because they did not fit the theme of public policies on road safety.

Subsequently, 76 complete articles were reviewed, of which 47 were excluded for not meeting the inclusion criteria or lacking access to the full text. Finally, 29 studies were included for systematic analysis. This process is summarized in the diagram (Figure 1).

**Inclusion and exclusion criteria Inclusion criteria:**

- Original articles or reviews published between 2019 and 2025.
- Studies with quantitative, qualitative, mixed methodology or systematic reviews.
- Research directly related to public policies in road safety.

**Exclusion criteria:**

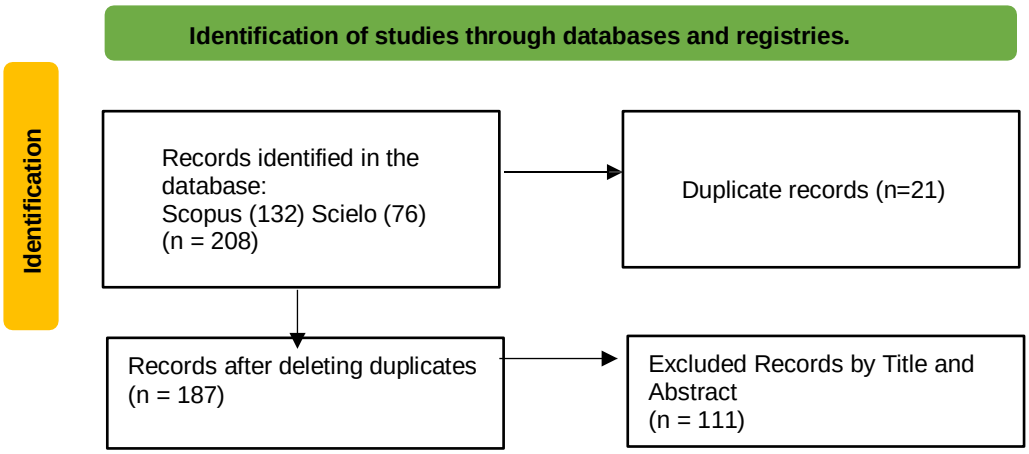
- Letters to the editor, reviews, book chapters, conference proceedings or narratives.
- Studies not explicitly linked to public policies on road safety (e.g., focused only on road engineering or vehicles without a political dimension).
- Articles without access to the full text.
- Publications that did not provide original contributions or relevant updates to the topic.

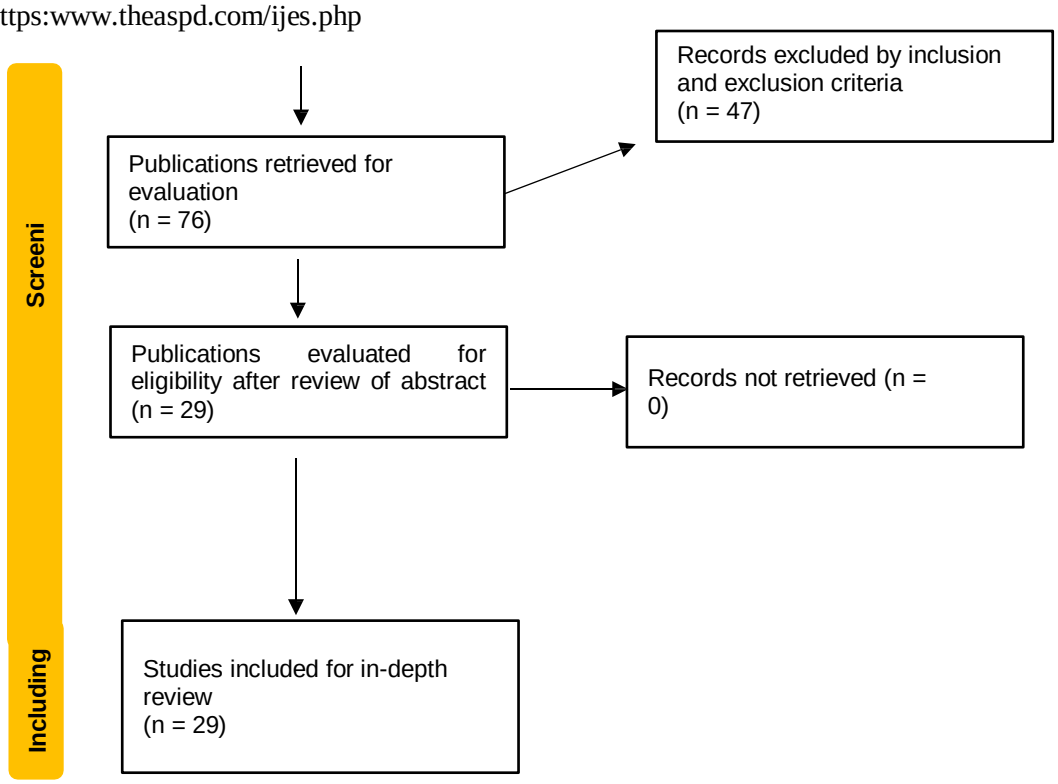
**Data extraction and analysis**

An extraction sheet was prepared with variables such as: authors, country, year, methodology, objectives, results and conclusions. Subsequently, the studies were grouped thematically according to similarities in public policies (regulation, education, infrastructure, sustainability, gender perspective, etc.). This classification facilitated critical analysis and made it possible to identify patterns, gaps and strategic recommendations.

Qualitative analysis and narrative synthesis were prioritized, describing common findings, divergences and gaps in the literature, as well as implications for the design of public policies. The methodological quality of the included studies was assessed through the relevance of their objectives, clarity in the description of methods and the robustness of the conclusions.

Figure 1*Scientific article review diagram*






After applying the criteria, 29 complete publications were selected for systematic analysis, as can be seen in Table 1.

Table 1 *Characteristics of the selected scientific articles*

| N° | Author | Scientific Article Title | Methodology | Country | Year | Databases |
|---|---|---|---|---|---|---|
| 1 | Torrado & Pacheco (2021) | Economic regulation in terrestrial automotive public passenger transport, in collective, massive and highway modality | Qualitative | Colombia | 2021 | Scopus |
| 2 | Martínez-Alvaro & Barea-López (2021) | Costs and benefits of gender policies in transportation. State of the art of quantitative approaches | Systematic review | Spain | 2021 | Scopus |
| 3 | Larraín-Videla et al. (2022) | Transport governance in metropolitan areas: critical review and analysis for Santiago de Chile | Qualitative | Chile | 2022 | Scopus |
| 4 | Segura y Jiménez (2019) | Evaluation of the influence zone of the San José-Sabanilla-La Campiña public transport trunk line | Mixed | Costa Rica | 2019 | Scopus |
| 5 | Gonçalves et al. (2025) | The recent evolution of the transportation planning process and methods in Brazil | Mixed | Brazil | 2025 | Scopus |
| 6 | Harsha et al. (2020) | Sustainable Urban Transport Policies to Improve Public Transportation System: A Case Study of Bengaluru, India | Quantitative | India | 2020 | Scopus |
| 7 | Mehdizadeh et al. (2024) | Navigating acceptance and controversy of transport policies | Quantitative | Norway | 2024 | Scopus |
| 8 | Wachter et al. (2024) | What can urban transport policy achieve? How transport-policy-invariant characteristics relate to city-level car ownership and car use | Quantitative | Germany | 2024 | Scopus |
| 9 | Zukowska et al. (2022) | Which transport policies increase physical activity of the whole of society? A systematic review | Systematic review | International | 2022 | Scopus |
| 10 | Weckström & Mladenović (2020) | Evaluation of public transport policy formulation and implementation: Case study of 24 mid-sized Nordic cities | Mixed | Scandinavia | 2020 | Scopus |
| 11 | Alatawneh & Torok (2025) | Use-stage emissions of conventional, battery electric, and autonomous vehicles in Europe | Quantitative | Europe and United Kingdom | 2025 | Scopus |
| 12 | Hörcher & Tirachini (2021) | A review of public transport economics | Systematic review | International | 2021 | Scopus |

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|---|---|---|---|---|---|---|
| 13 | David & Kilani (2022) | Transport policies in polycentric cities | Quantitative | France | 2022 | Scopus |
| 14 | Vickerman (2024) | The transport problem: The need for consistent policies on pricing and investment | Qualitative | United Kingdom | 2024 | Scopus |
| 15 | Alhassan & Anciaes (2025) | Public transport investments as generators of economic and social activity | Systematic review | International | 2025 | Scopus |
| 16 | Rasca & Saeed (2022) | Exploring the factors influencing the use of public transport by commuters living in networks of small cities and towns | Quantitative | Norway | 2022 | Scopus |
| 17 | Zarabi et al. (2024) | Enhancing public transport use: The influence of soft pull interventions | Systematic review | International | 2024 | Scopus |
| 18 | De Borger & Proost (2022) | Covid-19 and optimal urban transport policy | Quantitative | Belgium | 2022 | Scopus |
| 19 | Kent et al. (2020) | Challenging policies that prohibit public transport use: Travelling with pets as a case study | Quantitative | Australia | 2020 | Scopus |
| 20 | Rodríguez-Hernández & Urrego (2023) | Population measures for road safety: beyond individual responsibility | Systematic review | Colombia | 2023 | Scielo |
| 21 | Del Carmen (2025) | Attitude change model: a pedagogical proposal for road safety | Qualitative | Spain and Mexico | 2025 | Scielo |
| 22 | Ormeño et al. (2025) | Management of local government public policies for urban development | Quantitative | Peru | 2025 | Scielo |
| 23 | Silvestre et al. (2024) | Public policies and their ephemeral response in the cycle paths executed within the monumental area of Tacna, Perú 2023 | Quantitative | Peru | 2024 | Scielo |
| 24 | Espinoza & Pico (2025) | Citizen participation, development and territorial planning | Mixed | Ecuador | 2025 | Scielo |
| 25 | Marquez et al. (2024) | Link between public transport quality and university wellbeing in Peru | Quantitative | Peru | 2024 | Scielo |
| 26 | Celleri et al. (2021) | Public policies for reducing traffic accidents due to alcohol consumption in Argentina | Systematic review | Argentina | 2021 | Scielo |
| 27 | Fuller (2021) | Public transport reorganization policies in the Lima metropolitan area during the covid-19 pandemic | Qualitative | Peru | 2021 | Scielo |
| 28 | Monge et al. (2023) | Analysis of perspectives and public policies focused on electric public transport bus modality in Costa Rica (2018-2022) | Qualitative | Costa Rica | 2023 | Scielo |
| 29 | Zuluaga et al. (2023) | Urban logistics and public policies modeled from systems dynamics: a general approach using bibliometric analysis | Systematic review | Latin America | 2023 | Scielo |

## RESULTS

According to the literature review carried out, the contributions of the scientific articles are shared

**Table 2**

*Thematic similarity of scientific articles on public policies on road safety.*

| Thematic Similarity | Authors | Objective | Key Conclusions |
|---|---|---|---|
| **Regulation and governance for road safety** | Torrado & Pacheco (2021) | Regulate collective public transport in Colombia | An autonomous and technical regulatory body is urgently needed to guarantee safe transport |
| | Larraín-Videla et al. (2022) | Urban transport governance in Santiago | Institutional integration is key; centralization and fragmentation weaken coherent policies |
| | Ormeño et al. (2025) | Urban planning in Peru | Citizen participation and urban plans with theoretical basis are essential |
| | Fuller (2021) | Interventions during Covid-19 in Lima | Informality and lack of investment reduce effectiveness; greater state capacity is required |
| | Monge et al. (2023) | Electric public transport in Costa Rica | Necessary institutional restructuring and specialized body to guarantee effective policies |
| | Zuluaga et al. (2023) | Review on urban logistics in Latin America | Policies must strengthen urban logistics management; still no consolidation in systems dynamics |
| **Road education and behavior change** | Del Carmen (2025) | Pedagogical model to change attitudes | Cognitive, behavioral and emotional education key for safe road culture |
| | Celleri et al. (2021) | Measures against drunk driving in Argentina | Evaluate local impact; policies must be evidence-based |
| | Rodríguez-Hernández & Urrego (2023) | Population measures beyond individual responsibility | Integral policies required: safe roads, strict regulation, international standards |
| **Infrastructure, planning and safe design** | Segura y Jiménez (2019) | Planning influence zone of stops in Costa Rica | Requires densification, public spaces and mixed uses to improve mobility |
| | Gonçalves et al. (2025) | Strategic planning in Brazil | Incorporate efficiency and safety indicators; inter-institutional coordination |
| | Weckström & Mladenović (2020) | PTN network development in Nordic cities | Hierarchical networks and flexibility optimize safe transport |
| | David & Kilani (2022) | PT lines in polycentric cities | Circular lines effective only in high congestion; mixed models improve results |
| | Silvestre et al. (2024) | Satisfaction with bike lanes in Tacna | Negative perception: ephemeral policies without safety impact |
| **Incentive policies and modal demand management** | Harsha et al. (2020) | BRT lanes and fares in Bengaluru | Increase efficiency and indirect safety; contribute to sustainability |
| | Mehdizadeh et al. (2024) | Citizen acceptance of policies in Norway | Traditional and emerging policies must align with citizen attitudes |
| | Zarabi et al. (2024) | Behavioral change toward public transport | Soft interventions must adapt to user change stages |
| | Kent et al. (2020) | Allow pets in public transport in Sydney | Inclusion promotes less car dependence; indirect impact on safety |
| | Rasca & Saeed (2022) | Factors influencing PT use | Distance, frequency and availability determine use; consider built environment |
| **Economic evaluation, sustainability and global policies** | Alatawneh & Torok (2025) | Environmental impact of vehicle technologies in Europe | Transition to electric reduces emissions, but depends on integral policies |
| | Vickerman (2024) | Need for optimal pricing systems post-Covid | Integrated policies and government coordination essential for sustainability |
| | Alhassan & Anciaes (2025) | Economic effects of PT investments | Investments improve social connection, but may generate gentrification |
| | Zukowska et al. (2022) | Evidence on policies that increase physical activity | Safe infrastructure for walking/cycling more effective if environment is safe |
| | Martínez-Alvaro & Barea-López (2021) | Quantitative evaluation of gender policies. | Urgent to develop ex post evaluations for efficient and equitable policies |

| | | |
|---|---|---|
| Wachter et al. (2024) | Influence of urban contextual factors | Omitting these factors distorts evaluations and policies; key to adapt to local realities |
| Espinoza & Pico (2025) | Citizen participation in territorial planning | Without participation and transparency, urban governance loses effectiveness |
| Marquez et al. (2024) | Transport quality and student wellbeing | Deficient transport affects health and academic performance; highlights insecurity as critical problem |
| De Borger & Proost (2022) | Covid-19 effects on PT policies | Adapt frequencies and fares; prioritize vulnerable users; promote alternative modes |

## DISCUSSION

### Safe urban transport infrastructure and planning

Safe urban transport infrastructure and planning integrate technical, social and political dimensions that determine the efficiency of mobility. Torrado and Pacheco (2021) highlight that an autonomous and technically sound regulatory body is essential to guarantee a continuous and safe service. Weckström and Mladenović (2020) point out that hierarchical networks with strategic trunks and nodes optimize performance and reduce vulnerabilities. In polycentric cities, circular lines make it possible to connect peripheries and reduce flows towards the center, improving fluidity (David & Kilani, 2022). Inter-agency coordination is essential, as institutional fragmentation hinders the implementation of effective policies (Larraín-Videla et al., 2022). Segura and Jiménez (2019) warn that the lack of territorial planning based on real needs generates investments that are misaligned with the demand for mobility.

An infrastructure design disconnected from displacement patterns amplifies structural risks. Larraín-Videla et al. (2022) show that the concentration of competencies at a few levels of government limits effective management. For Torrado and Pacheco (2021), the absence of technical information systems leads to reactive and inefficient decisions. Weckström and Mladenović (2020) propose a flexible design that responds to urban demand, while Segura and Jiménez (2019) highlight the integration of transport with land use to strengthen urban functionality. A systemic approach requires regulatory tools that articulate spatial planning, technical operationality, and policy management. The structural consistency of the network makes it possible to anticipate disruptions and maintain the safety of users (Weckström and Mladenović, 2020). In addition, technical indicators are essential for setting rates and scheduling operations (Torrado and Pacheco, 2021). The opening of strategic corridors must be accompanied by modal incentives that prioritize public transport (David & Kilani, 2022), while well-planned urban densification can reduce unsafe journeys (Segura & Jiménez, 2019). Finally, integrated governance, based on technical legitimacy and citizen participation, is key to aligning infrastructures with security standards (Larraín-Videla et al., 2022). **Road safety education and behaviour change**

Road safety education and behaviour change are interdependent dimensions to consolidate safe and sustainable mobility environments. Rodríguez and Urrego (2023) highlight that interventions in physical, normative, and technological environments must be accompanied by educational processes of population scope. Zarabi et al. (2024) point out that effective policies require motivational strategies adapted to the stages of behavior change to displace habits rooted in car use. Celleri et al. (2021) found that policies based on scientific evidence, such as those aimed at reducing alcohol consumption while driving, achieve greater acceptance and effectiveness. The effectiveness of educational programs is enhanced when they are articulated with an analysis of the environment and the social conditions of displacement. Rasca and Saeed (2022) showed that factors such as distance to work, car ownership, and parking availability

influence modal choice, aspects that should be considered when designing strategies to promote public transport. Rodríguez and Urrego (2023) warn that, without educational governance oriented towards cultural change, campaigns quickly lose impact. Zarabi et al. (2024) propose gentle interventions, such as awareness management and user satisfaction, aligned with the stages of personal change to achieve greater effectiveness. Celleri et al. (2021) emphasize that impact evaluation must be integrated from the design of the program to ensure sustainable results. A comprehensive perspective demands interdisciplinary approaches that combine empirical evidence, social pedagogy, and modal analysis. Rasca and Saeed (2022) highlight that the built environment conditions the perception of public transport as a viable option, which can facilitate or inhibit safe practices. Rodríguez and Urrego (2023) insist that public policies must go beyond the punitive approach and promote training processes focused on citizen co-responsibility. Zarabi et al. (2024) state that breaking ingrained habits requires interventions that transform both the environment and individual awareness, while Celleri et al. (2021) underline that only policies with systematic monitoring achieve sustained impacts on road safety.

**Evaluation and monitoring of public policies**

The evaluation and monitoring of public policies on mobility are essential to link strategic objectives with real results. Martínez-Alvaro and Barea-López (2021) warn that, without quantitative ex post analysis, decisions are based on assumptions rather than evidence. Gonçalves et al. (2025) highlight that predictive models allow us to anticipate social, economic, and environmental impacts, while Vickerman (2024) points out that evaluation frameworks lose effectiveness when they are subordinated to short political cycles. Alhassan and Anciaes (2025) stress the need to measure the transformations derived from investments in transport to avoid regressive results, and Zukowska et al. (2022) argue that articulating infrastructure, promoting modal changes, and continuous monitoring favors sustainable impacts. The systems

They fulfill an anticipatory function by allowing mismatches to be corrected before they escalate. Martínez-Alvaro and Barea-López (2021) argue that experience in measuring intangible impacts, such as the value of life, can be applied to dimensions such as gender equity. The effectiveness of policies for active school transport depends on their adaptation to safe environments (Zukowska et al., 2022), and Vickerman (2024) warns that formulating fare decisions in isolation compromises global coherence. According to Alhassan and Anciaes (2025), understanding territorial diversity explains why similar interventions generate different results, while Gonçalves et al. (2025) highlight that adopting latent risk indicators improves vulnerability detection. In addition to optimizing technical performance, monitoring strengthens institutional transparency. Martínez-Alvaro and Barea-López (2021) point out that combining disaggregated metrics with visualization tools helps identify inequities in policy implementation. Gonçalves et al. (2025) highlight that converting large volumes of data into accessible operational decisions is key to efficient planning. Zukowska et al. (2022) recall that the quality of evaluative studies determines the validity of causal inferences, and Vickerman (2024) insists that the lack of multilevel coordination fragments policies. Alhassan and Anciaes (2025) conclude that continuous monitoring of externalities allows interventions to be adjusted before negative effects are consolidated.

**Institutional management and governance of transport**

The institutional management of transport faces structural tensions that affect its territorial coherence and sustainability. Ormeño et al. (2025) warn that local governments lack technical instruments to coordinate urban planning and mobility, which fragments the public response. Fuller (2021) points out that the concentration of power in informal actors limits the state's capacity to regulate transport in situations of health crisis. Espinoza and Pico (2025) show that regulatory gaps and lack of administrative continuity weaken the implementation of territorial plans, while Monge et al. (2023) highlight that the absence of a national agenda on electricity transport prevents progress towards coordinated governance models. In addition, Mehdizadeh et al. (2024) highlight that citizens' perception of technical legitimacy directly influences the acceptance of structural reforms. Fragmented governance schemes reduce the effectiveness of mobility policies. Fuller (2021) explains that the coexistence of formal and informal operators generates regulatory contradictions that hinder the reorganization of transport. Ormeño et al. (2025) point out that solid institutional integration can improve spending efficiency and service quality, while Mehdizadeh et al. (2024) show that citizen attitudes towards emerging policies are key to their viability. Espinoza and Pico (2025) show that the lack of community feedback in planning limits democratic governance, and Monge et al. (2023) propose the creation of specialized technical entities that guarantee continuity beyond political cycles. Institutional strengthening requires a regulatory framework that articulates coherence between levels of government. Ormeño et al. (2025) recommend intergovernmental legal frameworks to facilitate cooperation between administrative levels. Fuller (2021) highlights that regulatory supervision is more difficult in systems with high informality. Espinoza and Pico (2025) argue that binding planning mechanisms can integrate urban development and mobility policies, while Mehdizadeh et al. (2024) stress that technical legitimacy and accountability strengthen citizen acceptance. Monge et al. (2023) conclude that only governance based on technical information, territorial coordination, and functional autonomy can respond to the challenges of today's urban transport.

**Gender perspective and safe mobility**

The incorporation of the gender perspective in mobility policies shows historical inequalities in the design and use of urban space. Martínez-Alvaro and Barea-López (2021) highlight that women's daily mobility involves fragmented journeys and multiple needs that traditional systems do not address, while Wachter et al. (2024) warn that the absence of gender-sensitive variables in transport limits universal safety and accessibility. Harsha et al. (2020) identify that women prioritize predictability, security

perceived and proximity in their journeys, and Hörcher and Tirachini (2021) stress that the social costs of transport must consider qualitative dimensions such as the perception of risk. The distribution of time and the burden of unpaid work directly influence the travel patterns of women and dissidents. Harsha et al. (2020) document that integrated mobility models must contemplate care, intermodality, and subjective safety. Wachter et al. (2024) demonstrate that conventional planning has ignored affective dimensions in the use of transport, while Martínez-Alvaro and Barea-López (2021) emphasize the need for gender-differentiated indicators to avoid biases in resource allocation. Hörcher and Tirachini (2021) warn that universal tariff models can hide specific barriers for historically marginalized groups. An intersectional approach in transport policies makes it possible to make visible multiple inequalities in access to and use of the system. Harsha et al. (2020) point out that perceptions of vulnerability vary according to age, gender, and socioeconomic level, affecting the effective use of transportation. Wachter et al. (2024) argue that equity requires representative and informed participation, and Hörcher and Tirachini (2021) argue that, without explicit compensation mechanisms, technological innovations can perpetuate structural inequalities. Finally, Martínez-Alvaro and Barea-López (2021) conclude that policy monitoring should be based on disaggregated data that reflect the complexity of the phenomenon.

**Environmental sustainability and efficient public transport**

Environmental sustainability in public transport requires transforming technology, as well as the operational and political logic of urban systems. Alatawneh and Torok (2025) point out that financial incentives for electrification must be accompanied by stable institutional frameworks, while De Borger and Proost (2022) argue that policies must internalize externalities such as congestion, noise, and emissions through economic instruments. Márquez et al. (2024) highlight that green transport initiatives gain legitimacy when they include co-creation processes with citizens, and Kent et al. (2020) show that the mass use of public transport depends on its perception as an efficient and socially accepted alternative. Monge et al. (2023) add that the energy transition must be supported by integrated charging networks, tariff interoperability and cross-sectoral coordination.

The efficiency of the system depends on its ability to adapt to the urban context and social demands. Zuluaga et al. (2023) document that accessibility barriers limit the impact of sustainable technologies on vulnerable populations, while Zukowska et al. (2022) highlight that modal integration and intelligent flow management optimize resources without sacrificing coverage. Alatawneh and Torok (2025) warn that technological solutions must be adjusted to local capacities, and Silvestre et al. (2024) propose incorporating multi-criteria analysis to balance environmental sustainability, social inclusion, and financial viability. Monge et al. (2023) recommend metropolitan governance structures that articulate mobility, energy, and urban planning.

Environmental governance requires policy alignment, sustained financing, and social legitimacy. Kent et al. (2020) point out that the perception of environmental justice influences the acceptance of restrictive measures on private mobility, while De Borger and Proost (2022) highlight that differentiated tariffs can penalize polluting technologies and reward efficiency. Márquez et al. (2024) stress that sustainable transport programs are most effective when they include active territorial participation, and Alatawneh and Torok (2025) warn that without technical assistance, intermediary cities face significant barriers to implementing sustainable solutions. Finally, Zuluaga et al. (2023) conclude that only planning focused on distributive justice guarantees that sustainability does not reproduce existing inequities.

## CONCLUSION

The findings of this review allow us to outline practical implications for the design and implementation of public policies aimed at road safety. First, it is recommended to strengthen control mechanisms through intelligent technologies (radars, cameras,

automated systems, points systems), articulated with strict and up-to-date regulatory frameworks. Secondly, it is a priority to institutionalize road safety education from the school stage, integrating pedagogical approaches that promote a sustained preventive culture. It also proposes to establish continuous monitoring systems with disaggregated indicators that allow the identification of territorial, gender and socioeconomic gaps in the implementation of policies. At the institutional level, governments need to consolidate cross-sectoral governance structures that ensure coordination between administrative levels, minimize fragmentation, and ensure the continuity of reforms across political cycles. It is also essential to incorporate citizen participation in the formulation and evaluation of policies, promoting active co-responsibility in the construction of safe, equitable and sustainable urban environments. The articulation of urban mobility policies reveals a deep interdependence between infrastructure, governance, environmental sustainability, road safety education and gender equality. The texts analyzed show that technical transformations are ineffective if they are disconnected from the social, territorial and institutional contexts that shape them. Evidence indicates that the effectiveness of interventions does not depend exclusively on physical or normative design, but on their integration with dimensions such as citizen perception, political legitimacy, and functional adaptability. This systemic perspective confirms that transport policies should not be approached as sectoral instruments, but as strategic nodes of comprehensive urban governance.

In this sense, evidence-based approaches and systematic evaluation emerge as key components to ensure sustained impacts. Monitoring mechanisms, when structured in a methodological and participatory way, allow not only to measure results, but also to provide feedback to decision-making processes. Tensions between levels of government, institutional informality, and regulatory fragmentation remain persistent barriers to the consolidation of safe and equitable mobility. In contrast, policies that incorporate criteria of environmental sustainability and social justice present better conditions to anticipate structural risks and respond to emerging citizen demands, offering practical solutions and ethical horizons that resignify the public meaning of transport.

For future research, it would be valuable to deepen comparative analyses between cities with different levels of development, integrating qualitative data and participatory approaches. It is also pertinent to explore the impacts of artificial intelligence and digitalization on mobility, as well as the regulatory evolution of gender policies in transport. Finally, the longitudinal evaluation of policies already implemented would provide key inputs to understand their real impacts and their possibilities of replicability.

In summary, the findings of this review provide a comprehensive and updated perspective on road safety as a strategic component of public policy, evidencing specific gaps and opportunities for Latin American countries. The identification of effective practices and common barriers allows the recommendations to be contextualized to environments marked by urban inequalities, structural informality, and lack of institutional continuity. This analysis offers an original framework for the design of interventions adapted to the Latin American reality, reinforcing the need for mobility policies that prioritize equity, environmental sustainability and citizen participation as central axes to move towards safer and fairer cities.

## REFERENCES

1. Aguinis, H., Kraus, S., Poč̌ek, J., Meyer, N., & Jensen, S. H. (2023). The why, how, and what of public policy implications of tourism and hospitality research. *Tourism Management, 97,* 104720. https://doi.org/10.1016/j.tourman.2023.104720
2. Alatawneh, A., & Torok, A. (2025). Use-stage emissions of conventional, battery electric, and autonomous vehicles in Europe. *Case Studies On Transport Policy*, 101398. https://doi.org/10.1016/j.cstp.2025.101398
3. Alhassan, J. A. K., & Anciaes, P. (2025). Public transport investments as generators of economic and social activity. *Journal Of Transport & Health, 41*, 101989. https://doi.org/10.1016/j.jth.2025.101989
4. Babić́, D., Babić́, D., Fiolic, M., & Ferko, M. (2022). *Horizontal and vertical signage in road safety*. *Encyclopedia*, *2*(4), 1738–1752. https://doi.org/10.3390/encyclopedia2040119

5. Berhanu, Y., Alemayehu, E., & Schröder, D. (2023). *Examining Road Accident Prediction and Road Congestion Prediction Techniques: A Comparative Analysis of Road Safety and Global Challenge Prevention in Low- and High-Income Countries*. *Journal of Advanced Transportation, 2023*, 6643412. https://doi.org/10.1155/2023/6643412
6. Boossabong, P. (2025). Is critical policy inquiry a legacy of Harold Lasswell? *Critical Policy Studies, 19*(1), 163–166. https://doi.org/10.1080/19460171.2025.2456139
7. Borucka, A., & Sobecki, G. (2023). A road safety evaluation model in the context of legislative changes. *Transport Problems, 18*(3), 41–51. https://doi.org/10.20858/tp.2023.18.3.04
8. Celleri, M., Brunelli, M., Cesan, M., & De Lellis, M. (2021). Public policies for the reduction of traffic accidents due to alcohol consumption in Argentina. *Interdisciplinary Journal of Psychology and Related Sciences, 38*(3), 275-286. https://doi.org/10.16888/interd.2021.38.3.16
9. Economic Commission for Latin America and the Caribbean (ECLAC). (2024). *Progress and challenges of road safety in Latin America and the Caribbean* (FAL Bulletin No. 404). https://repositorio.cepal.org/handle/11362/48687
10. European Commission. (2024). *Road safety statistics: 2023 figures show stalled progress in reducing road deaths in too many countries*. https://transport.ec.europa.eu/news-events/news/2023-figures-show-stalling-progress-reducing-road-fatalities-too-many-countries-2024-03-08_en
11. Congress of the Republic of Peru. (2023). *Law No. 31914: Law that promotes road safety and sustainable urban mobility*. https://wb2server.congreso.gob.pe/spley-portal-service/archivo/OTIxMTQ%3D/pdf
12. European Transport Safety Council. (2024). *18th Annual Report of the Road Safety Performance Index (PIN Report)*. https://etsc.eu/18th-annual-road-safety-performance-index-pin-report/
13. David, Q., & Kilani, M. (2022). Transport policies in polycentric cities. *Transportation Research Part A Policy and Practice, 166*, 101–117. https://doi.org/10.1016/j.tra.2022.09.017
14. De Borger, B., & Proost, S. (2022). Covid-19 and optimal urban transport policy. Transportation Research Part A: *Policy and Practice, 163*, 20–42. https://doi.org/10.1016/j.tra.2022.06.012
15. Del Carmen, D. (2025). Model of change of attitudes: a pedagogical proposal for road safety. *Emerging Trends In Education, 7*(14), 105-112. https://doi.org/10.19136/etie.v7n14.6321
16. Ehsani, J. P., Michael, J. P., & MacKenzie, E. J. (2023). The future of road safety: Challenges and opportunities. *The Milbank Quarterly, 101*(Suppl 1), 613–636. https://doi.org/10.1111/1468-0009.12644
17. Espinoza, L., & Pico, E. (2025). Citizen participation, development and territorial planning. *InveCom Magazine, 5*(1), e501049. https://doi.org/10.5281/zenodo.11268082
18. International Transport Forum. (2023). *Annual Report on Road Safety 2023*. Published by the OECD. https://doi.org/10.1787/8654c572-en
19. Fuller, E. P. (2021). Policies for the reorganization of public transport in the metropolitan area of Lima during the covid-19 pandemic. *State & Commons, 2*(13). https://doi.org/10.37228/estado_comunes.v2.n13.2021.224
20. Global Alliance of NGOs for Road Safety. (2022). *Road Safety in Latin America: The Region's Challenge to Achieve Global Goals*. http://roadsafetyngos.org/wp-content/uploads/2022/03/LAC-ESP-Final.pdf
21. Goel, R., Tiwari, G., Varghese, M., Bhalla, K., Agrawal, G., Saini, G., Jha, A., John, D., Saran, A., White, H., & Mohan, D. (2024). Effectiveness of road safety interventions: An evidence and gap map. *Campbell Systematic Reviews, 20*(1), e1367. https://doi.org/10.1002/cl2.1367
22. Gonçalves, B., Lavor, G., Silva, L., & Queiroz, T. L. (2025b). The recent evolution of the transportation planning process and methods in Brazil. *Transportation Research Procedia, 82*, 219–232. https://doi.org/10.1016/j.trpro.2024.12.039
23. Harsha, V., Karmarkar, O., & Verma, A. (2020b). Sustainable Urban Transport Policies to Improve Public Transportation System: A Case Study of Bengaluru, India. *Transportation Research Procedia, 48*, 3545–3561. https://doi.org/10.1016/j.trpro.2020.08.097
24. Hendren, K., Newcomer, K., Pandey, S. K., Smith, M., & Sumner, N. (2023). How can qualitative research methods be leveraged to strengthen mixed-methods research in public policy and public administration? *Public Administration Review, 83*(3), 468–485. https://doi.org/10.1111/puar.13528
25. Hörcher, D., & Tirachini, A. (2021). A review of public transport economics. *Economics Of Transportation, 25*, 100196. https://doi.org/10.1016/j.ecotra.2021.100196
26. Kent, J. L., Mulley, C., & Stevens, N. (2020). Challenging policies that prohibit public transport use: Travelling with pets as a case study. *Transport Policy, 99*, 86–94. https://doi.org/10.1016/j.tranpol.2020.08.024
27. Larraín-Videla, C., Muñoz, J.-C., & Briones, J. (2022). Transport governance in metropolitan areas: a critical review and analysis for Santiago de Chile. *EURE (Santiago), 48*(145), 1–24. https://dx.doi.org/10.7764/eure.48.145.14
28. Linquiti, P. (2024). Operationalizing Lasswell's call for clarification of value goals: an equity-based approach to normative public policy analysis. *Policy Sciences, 57*(1), 193-219. https://doi.org/10.1007/s11077-024-09525-w
29. Mahardhani, A. J. (2023). The Role of Public Policy in Fostering Technological Innovation and Sustainability. *Journal of Contemporary Administration and Management (ADMAN), 1*(2), 47–53. https://doi.org/10.61100/adman.v1i2.22
30. Márquez, E. D. Z., Mendoza, C. H. N., Anton, C. H. C., & Placencia, L. R. V. (2024). Link between quality of public transport and university well-being in Peru. *Prohominum, 6*(2), 109-125. https://doi.org/10.47606/acven/ph0237
31. Martínez-Alvaro, O., & Barea-López, P. (2021). Costs and benefits of gender policies in transportation. State of the art of quantitative approaches. *Transportation Research Procedia, 58*, 111–118. https://doi.org/10.1016/j.trpro.2021.11.016

32. McCarty D, Kim HW (2024) Risky behaviors and road safety: An exploration of age and gender influences on road accident rates. *PLoS ONE 19*(1): e0296663. https://doi.org/10.1371/journal.pone.0296663
33. Mehdizadeh, M., Solbu, G., Klöckner, C. A., & Skjølsvold, T. M. (2024). Navigating acceptance and controversy of transport policies. *Transportation Research Part A Policy And Practice*, *187*, 104176. https://doi.org/10.1016/j.tra.2024.104176
34. Ministry of Transport and Communications of Peru. (2023). *National Multisectoral Road Safety Policy 2023–2030.* https://cdn.www.gob.pe/uploads/document/file/4898855/Pol%C3%ADtica%20Nacional%20Multisectorial%20de%20Seguridad%20Vial%202023%20%E2%80%93%202030.pdf
35. Ministry of Transport and Communications of Peru. (2024). *Compliance Report of the National Multisectoral Road Safety Policy 2023 (PNMSV).* https://www.gob.pe/institucion/mtc/informes-publications /5665429-report-on-compliance-of-the-national-multisectoral-road-safety-policy-2023-pnmsv
36. Monge, J. A., Valverde, J. R., & Díaz-Arrieta, J. P. (2023). Analysis of perspectives and public policies focused on electric public transport in Costa Rica (2018-2022). *Road Infrastructure, 25*(44), 1-17. https://doi.org/10.15517/iv.v25i44.54872
37. National Road Safety Observatory of Peru. (2024). *Statistical bulletin of road accidents 2023*. https://www.onsv.gob.pe/post/boletin-estadistico-de-siniestralidad-vial-2023/
38. Regional Office for Africa. (2024). *Report on the State of Road Safety in the WHO African Region, 2023.* Brazzaville: World Health Organization. https://www.afro.who.int/publications/road-safety-who-african-region-2023
39. World Health Organization. (2023a). *Global State of Road Safety Report 2023*. Geneva: World Health Organization. https://www.who.int/publications/i/item/9789240086517
40. World Health Organization. (2023b). *Despite notable progress, road safety remains a pressing issue for the world.* https://www.who.int/es/news/item/13-12-2023-despite-notable-progress-road-safety-remains-urgent-global-issue
41. Pan American Health Organization. (2023). *Implementation of priority road safety measures in Latin America and the Caribbean*. https://iris.paho.org/handle/10665.2/58448
42. Pan American Health Organization. (2025). *PAHO's new report on road safety highlights slow and uneven progress.* https://www.paho.org/es/noticias/22-1-2025-nuevo-informe-ops-sobre-seguridad-vial-destaca-avances-slow-uneven
43. Ormeño, C., Soto, C., & Domínguez, D. (2025). Management of local government public policies for urban development. *InveCom Magazine,* 5(1), e501055. https://doi.org/10.5281/zenodo.11377935
44. Peng, Y., & Tao, C. (2022). Can digital transformation promote business performance? — From the perspective of public policy and innovation. *Journal of Innovation & Knowledge, 7*(3), 100198. https://doi.org/10.1016/j.jik.2022.100198
45. Qawasmeh, F. A. (2022). Understanding the field of public policy in the context of public administration evolution. In *Public Affairs Education and Training in the 21st Century* (ch. 2, p. 23). IGI Global. https://doi.org/10.4018/978- 1-7998-8243-5.CH002
46. Rasca, S., & Saeed, N. (2022). Exploring the factors influencing the use of public transport by commuters living in networks of small cities and towns. *Travel Behaviour And Society, 28,* 249–263. https://doi.org/10.1016/j.tbs.2022.03.007
47. Regmi, M. B. (2021). Road safety policy and practice: What does it take to improve road safety in Asia? *Journal of Road Safety, 32*(4), 29–39. https://search.informit.org/doi/abs/10.3316/informit.168305961811638
48. Rodríguez-Hernández, J. M., & Urrego, D. C. (2023). Population measures for road safety: beyond individual responsibility. *UIS Health, 55*(1). https://doi.org/10.18273/saluduis.55.e:23033
49. Segura-Segura, D., & Jiménez-Romero, D. (2019). Evaluation of the area of influence of the San José-Sabanilla-La Campiña public transport trunk through the methodology of development oriented to public transport. *Revista Infraestructura Vial, 21*(37), 21–31. https://revistas.ucr.ac.cr/index.php/vial/article/view/42615/42905
50. Silvestre, R. F. V., Camones, C. H. P., Sotelo-Gonzáles, S., De Rodríguez, N. B. V. O., & Walstrohm, C. J. G. (2024). Public policies and their ephemeral response in the cycle paths executed within the monumental area of Tacna, Peru 2023. *STOIAH, 13*(25), 201-210. https://doi.org/10.18537/est.v013.n025.a12
51. Sohail, A., Cheema, M. A., Ali, M. E., Toosi, A. N., & Rakha, H. A. (2023). Data-driven approaches to road safety: A comprehensive systematic review of the literature. *Safety Science, 158*, 105949. https://doi.org/10.1016/j.ssci.2022.105949
52. St.Denny, E., & Zittoun, P. (2024). Chapter 1: Introduction to the *Handbook of Teaching Public Policy*. In *Handbook of Teaching Public Policy* (pp. 1–15). Edward Elgar Publishing. https://doi.org/10.4337/9781800378117.00008
53. Torgerson, D. (2024). Harold Lasswell as distinct from his work: The method of immanent critique and its implications. *Policy Sciences, 57*, 931–947. https://doi.org/10.1007/s11077-024-09485-w
54. Torrado, M. L. R., & Pacheco, S. S. G. (2021). Economic regulation in public land transport of passengers, in collective, mass and road modes. *Deleted Journal, 70.* https://doi.org/10.11144/javeriana.vj70.retp

55. Moana, R., Perri, G., Iuele, T., & Gallelli, V. (2021). A comprehensive approach combining regulatory procedures and accident data analysis for road safety management based on the European Directive 2019/1936/EC. *Safety, 7*(1),
6. https://doi.org/10.3390/safety7010006
56. Vickerman, R. (2024). The transport problem: The need for consistent policies on pricing and investment. *Transport Policy, 149*, 49–58. https://doi.org/10.1016/j.tranpol.2024.02.009
57. Wachter, I., Holz-Rau, C., & Heinen, E. (2024). What can urban transport policy achieve? How transport-policy-invariant characteristics relate to city-level car ownership and car use. *Cities, 147*, 104769. https://doi.org/10.1016/j.cities.2023.104769
58. Weckström, C., & Mladenović, M. N. (2020). Evaluation of public transport policy formulation and implementation: Case study of 24 mid-sized Nordic cities. *Transportation Research Procedia, 45*, 979–986. https://doi.org/10.1016/j.trpro.2020.02.068
59. Zarabi, Z., Waygood, E. o. D., Olsson, L., Friman, M., & Gousse-Lessard, A. (2024). Enhancing public transport use: The influence of soft pull interventions. *Transport Policy, 153*, 190–203. https://doi.org/10.1016/j.tranpol.2024.05.005
60. Zhao, L., Chai, H., Han, Y., Yu, K., & Mumtaz, S. (2022). A collaborative method of V2X data correction for road safety. *IEEE Transactions on Reliability, 71*(2), 951–962. https://doi.org/10.1109/TR.2022.3159664
61. Zukowska, J., et al. (2022b). Which transport policies increase physical activity of the whole of society? A systematic review. *Journal Of Transport & Health, 27*, 101488. https://doi.org/10.1016/j.jth.2022.101488
62. Zuluaga, C. M. G., Osorno, G. M., Mosquera, J. D. S., & Fontal, J. C. U. (2023). Urban logistics and public policies modeled from systems dynamics: a general approach using bibliometric analysis. *Economic Semester, 25*(59), 1-17. https://doi.org/10.22395/seec.v25n59a3