

2025

The State of Public Transportation Report



optibus

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Introduction

Public transportation systems face a range of operational and strategic challenges. Optibus conducted this survey to assess key industry concerns including driver shortages, the transition to zero-emission fleets, and the adoption of new technologies. The goal was to validate assumptions, identify potential oversights, and explore how priorities differ across regions.

This report provides a snapshot of the current state of public transportation planning, highlighting the most pressing issues, emerging trends, and areas of opportunity. Our analysis of industry insights offers actionable guidance for Public Transport Operators (PTOs) and Public Transport Authorities (PTAs) worldwide in making informed decisions that enhance service reliability and future-readiness.

Methodology

In December 2024, we conducted a survey involving 231 senior professionals across key operational and strategic roles, including Heads of Scheduling, Heads of Planning, CIOs, COOs, Innovation Managers, CEOs, CFOs, and Fleet and Depot Managers. Respondents represented both PTOs and PTAs, spanning North America, Europe, Latin America, and the Asia-Pacific region.

The survey targeted organizations with fleets of 20 or more vehicles or those involved in public transportation operations without a direct fleet. Responses were collected in collaboration with Global Surveyz, an independent survey firm, ensuring a diverse and representative dataset.



Executive Summary

The 2025 State of Public Transportation Report highlights the key priorities, challenges, and investment trends shaping the industry, based on survey findings:

1. Driver Safety & Retention: The Most Critical Organizational Goal

Workforce challenges, particularly driver recruitment, retention, and safety, are the top priority for 36% of public transportation organizations. In some regions, such as the UK, Germany, and Austria, this figure rises to 45%, highlighting the urgency of addressing driver-related concerns. Retention and recruitment are cited as the biggest workforce challenges by 49% of respondents, while 37% emphasize driver safety as a major concern. To address these issues, 48% of agencies are exploring real-time shift adjustment tools and 37% are investing in driver safety technologies.

2. Electrification: Growing from Important to Essential

The transition to zero-emission fleets is becoming significantly more important over time. Today, nearly 90% of respondents consider the transition to zero-emission fleets as at least 'moderately important'. Within the next five years, electrification will become a critical goal or top priority for the vast majority of survey respondents. Despite mounting regulatory pressure and sustainability commitments, 80% cite infrastructure delays as a key challenge, alongside funding shortages and regulatory hurdles.

3. Real-Time Monitoring: The #1 Planned Investment

Among planned technology investments, real-time monitoring ranks as the top priority (43%). The lack of real-time tools already contributes to financial losses, with 48% of agencies reporting moderate losses and 20% experiencing significant financial strain due to delays in operational responses. Investments in real-time monitoring aim to enhance service reliability, optimize fleet performance, and improve the experience for both drivers and passengers.

4. Artificial Intelligence (AI): High Interest, Low Investment

While 96% of respondents have explored AI, full adoption remains slow, with only 6% actively using AI and 36% planning to invest in it. This gap between exploration and investment underscores key barriers such as implementation challenges, integration complexities, and difficulties in measuring ROI.



Conclusion

The findings from this report underscore the need for driver-centric strategies, electrification planning, AI readiness, and real-time monitoring investments to improve service quality and long-term sustainability. As industry professionals navigate these priorities, technology-driven solutions will play a crucial role in shaping the future of public transportation.



Survey Report Findings

Critical Organizational Goals for the Next Five Years

Public transportation organizations are focused on long-standing challenges while adapting to emerging trends. Over the next five years, driver safety and retention (36%) will be the top organizational goal, closely followed by improving passenger experience, transitioning to electric fleets, and cost reduction (each at 33%).

While these priorities have remained relatively consistent in past surveys, regional differences reveal distinct areas of concern. In UK/DE/AT, driver safety and retention is the dominant focus (45%), whereas LATAM prioritizes cost reduction (53%). In ES/PT/IT, 47% of respondents emphasize data-driven decision-making, and 43% cite AI & analytics as a top goal—reflecting a growing industry-wide interest in leveraging new technologies for operational improvements.

The focus on cost reduction in Southern Europe is already shaping real-world strategies. For example, Portuguese public transportation operator Horários do Funchal improved operational efficiency and financial sustainability by leveraging Optibus’ AI-powered scenario analysis tools, enabling more cost-effective decision-making.

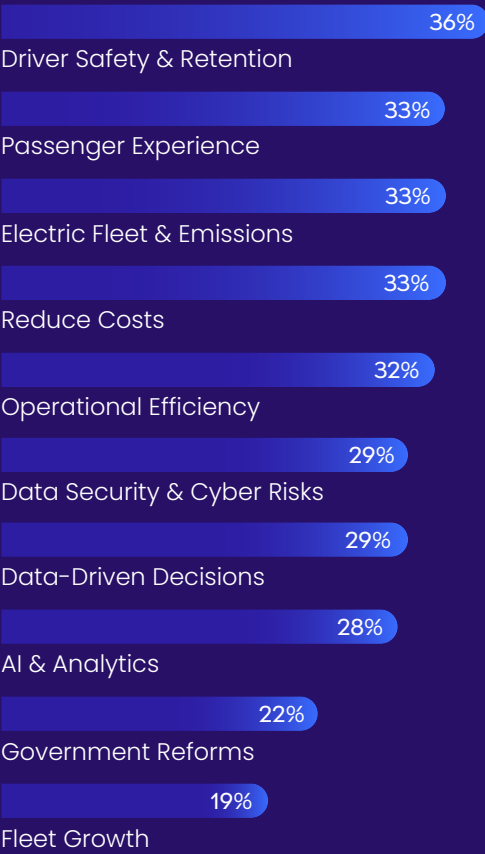


Figure 1: Critical Organizational Goals for the Next Five Years.

	All	Region				
		NA	UK/DE/AT	ES/PT/IT	LATAM	ANZ
Driver Safety & Retention	36%	39%	45%	40%	43%	29%
Passenger Experience	33%	33%	31%	20%	33%	42%
Electric Fleet & Emissions	33%	30%	33%	33%	37%	32%
Reduce Costs	33%	23%	33%	53%	27%	29%
Operational Efficiency	32%	35%	29%	17%	30%	32%
Data Security & Cyber	29%	30%	29%	20%	40%	39%
Data-Driven Decisions	29%	32%	25%	47%	27%	13%
AI & Analytics	28%	21%	35%	43%	17%	29%
Government Reforms	22%	27%	22%	13%	23%	26%
Fleet Growth	19%	26%	16%	13%	23%	19%

Figure 2: Critical Organizational Goals by Region.

*Question allowed more than one answer and as a result, percentages will add up to more than 100%

Driver Workforce Challenges in 2025

Driver recruitment and retention (chosen by 49% of survey respondents) remains the most pressing challenge in 2025, reflecting ongoing industry-wide struggles to attract and maintain a stable workforce. Additional concerns such as reducing driver-related incidents (46%), supporting driver well-being (45%), and offering competitive compensation (39%), all impact long-term retention.

Communication and real-time shift adjustments (48%) also rank high. Duarte Cunha, Planning and Operations Manager at TST, a Portuguese passenger transportation provider, noted that the limitations of previous communication methods created challenges for both drivers and controllers:

“

TST Needed a solution that offered comprehensive information in real-time, enhancing the overall driver experience.

TST

Safety (37%) is also a major focus, with operators actively exploring technological solutions to enhance driver protection. For example, TRAM Barcelona implemented an advanced monitoring system to detect fatigue and improve safety following a critical incident.

Regulatory changes, such as the EU General Safety Regulation II, further emphasize the need for enhanced driver protection. GSR2 mandates safety features for buses, including Intelligent Speed Assistance (ISA), Advanced Emergency Braking Systems (AEBS), and Blind Spot Information Systems (BSIS).

*Question allowed more than one answer and as a result, percentages will add up to more than 100%

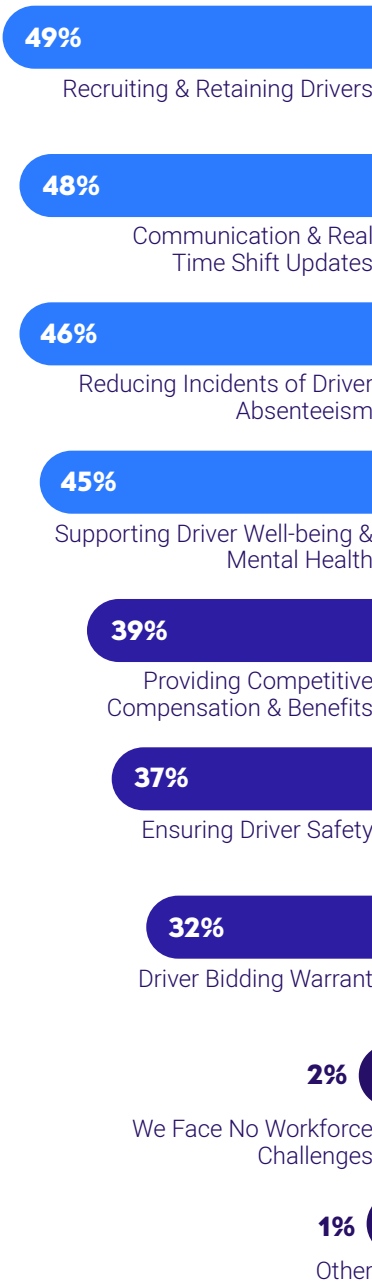


Figure 3: Driver Workforce Challenges in 2025

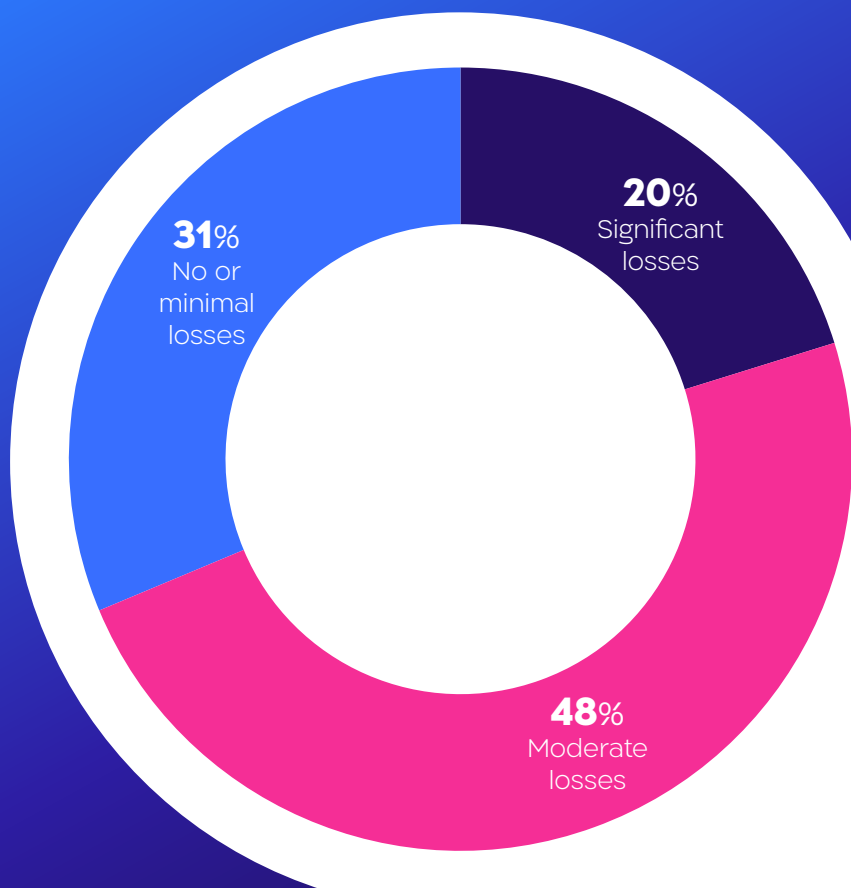


Figure 4: Financial Impact of Limited Real-Time Tools

Financial Impact of Limited Real-Time Tools

Not having the proper real-time tools are a financial burden for transit operators, leading to 48% of respondents facing moderate losses and 20% facing significant losses. Without real-time monitoring, issues such as driver shortages and vehicle failures escalate, leading to service disruptions, fines, and costly last-minute fixes.

For example, with real-time tools, an electric bus running low on charge can be rerouted to a charger in time—without intervention, it may require towing or risk voiding its battery warranty. Similarly, delays in assigning replacement drivers can prevent buses from going out, reducing service reliability and increasing penalties.

The financial impact of these inefficiencies is driving investment priorities. Real-time monitoring is the top planned investment for 2025 (Figure 9), signaling a shift toward proactive management to prevent losses.

Importance of Transitioning to Zero-Emission Fleets

The transition to zero-emission fleets is a strategic priority becoming increasingly critical, with 52% of respondents expecting it to be extremely important and 35% critically important by 2028. This marks a major shift from today, where most view it as only moderately (44%) or slightly (4%) important.

Government regulations, such as the EU's Clean Vehicles Directive, are accelerating this shift by setting strict procurement targets for zero-emission public transportation by 2030. However, electrification is a complex process requiring funding, infrastructure upgrades, new charging schedules, and operational adjustments. Factors like seasonal charging variations, cost fluctuations, and driver behavior further add to the challenge.

Cities already implementing electric fleets, like Santiago, Chile, highlight the benefits: "The Chilean authorities have initiated a variety of measures to combat poor air quality... Electric vehicles are a major part of the solution," as authorities push for full electrification by 2040.

Investing in this transition now will be essential for long-term sustainability.

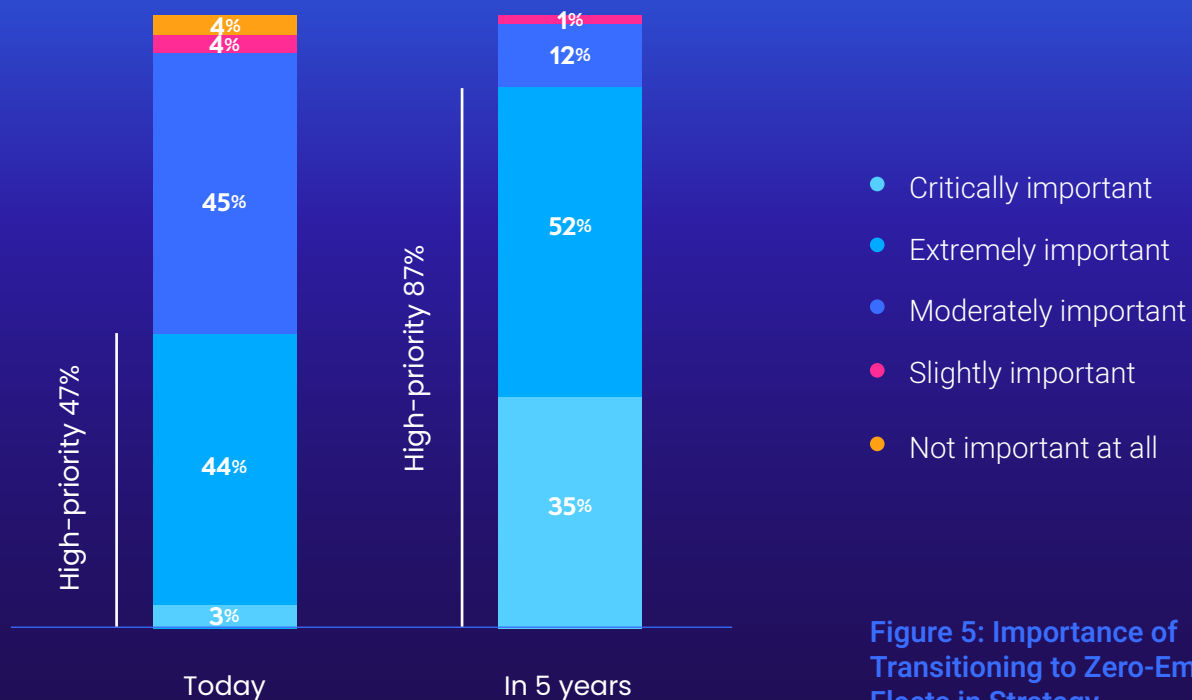


Figure 5: Importance of Transitioning to Zero-Emission Fleets in Strategy

Challenges in Achieving Zero-Emission Goals

Infrastructure delays (80%) are the biggest challenge to zero-emission adoption. Complex negotiations and alignment with city officials, landlords, and utility providers have stalled the development and supply of adequate charging infrastructure, leaving many depots without the necessary power grid connections and stalling electrification efforts.

Regulatory differences and policy changes (42%) influence the transition to zero-emission fleets in varying ways across regions (Figure 7). In Brazil and Chile, regulatory hurdles (53%) are a major concern, as opposed to Australia and New Zealand, where only 29% of survey respondents consider them an issue. Australia and New Zealand benefit from a more streamlined approach, with their National Electric Vehicle Strategy prioritizing infrastructure development, policy alignment, and affordability, easing the transition for operators.

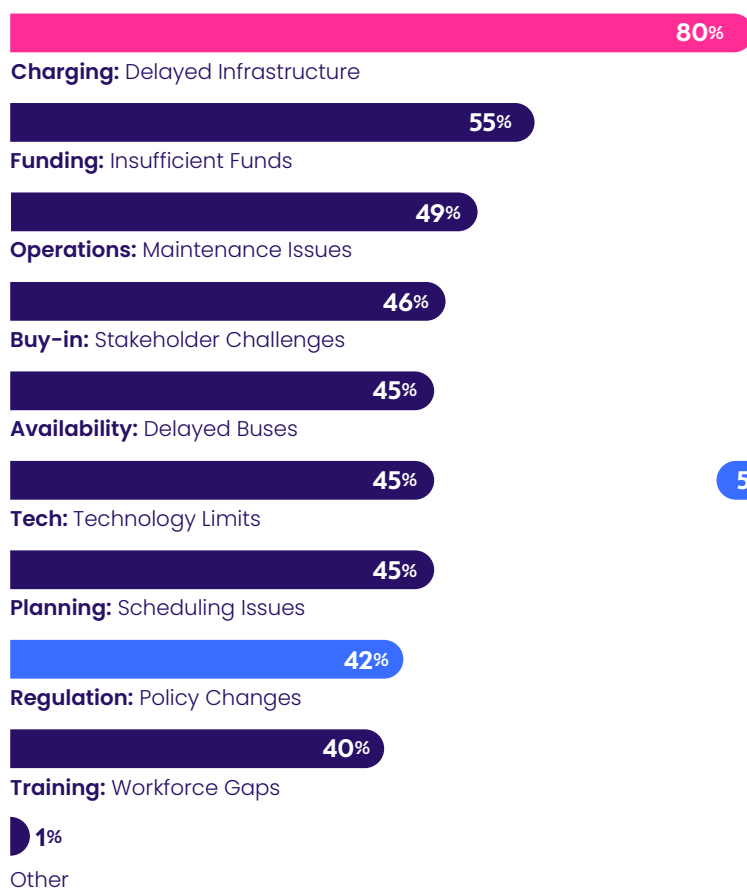
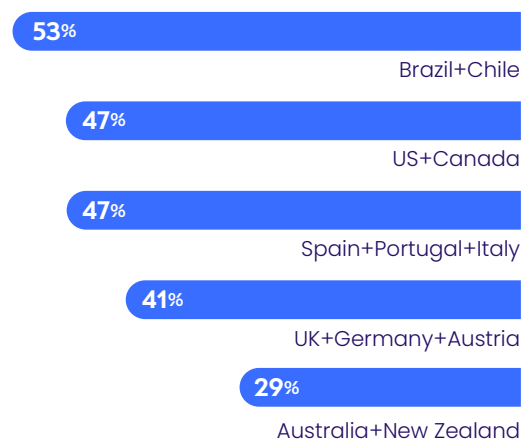


Figure 6: Challenges in Achieving Zero-Emission Goals



Figure 7: Regulation by region



*Question allowed more than one answer and as a result, percentages will add up to more than 100%

AI Maturity Level in Organizational Operations & Strategy

AI is a topic of strong interest, with 95% of organizations having either piloted, implemented, or researched AI tools. However, full-scale adoption remains limited. Only 8% actively use AI and are seeing measurable and transformative benefits.

Despite widespread exploration, only 36% of organizations plan to invest in AI (Figure 9). While AI's potential is widely acknowledged, moving from experimentation to strategic implementation remains a hurdle. A recent study on AI in public transport found that AI has substantial untapped potential to improve efficiency, reliability, and sustainability, but more real-world implementation and validation are needed

Organizations must carefully evaluate their AI strategy to ensure they leverage its capabilities for operational efficiency and decision-making.



Planned Technology Investments for 2025

Public transportation organizations are prioritizing modernization in 2025, with real-time monitoring (43%), mobile payments (42%), and passenger information systems (41%) leading planned investments. All of these areas of investment also contribute to improving the passenger experience.

Other major areas of focus include cloud data solutions (39%), driver safety tools, AI and analytics, and PTO-PTA coordination tools (all 37%).

Real-time monitoring's top ranking aligns with financial concerns, as significant operational losses have been linked to the lack of real-time tools (Figure 4). As this blog highlights, enhancing live visibility into traffic, service disruptions, and safety incidents allows for immediate response, improving passenger experience, driver conditions, and overall efficiency.

With investments spanning multiple technologies, it is clear that the industry is embracing digital transformation to enhance efficiency, sustainability, and passenger satisfaction.

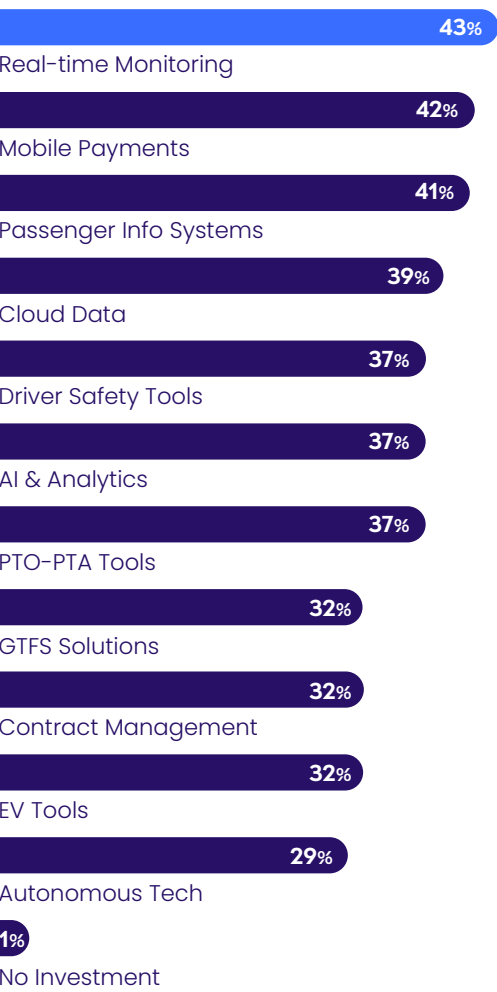
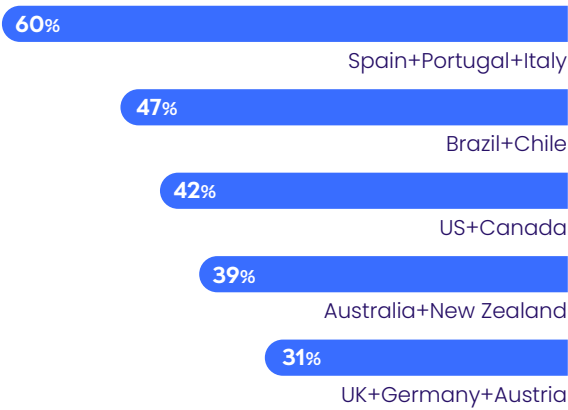
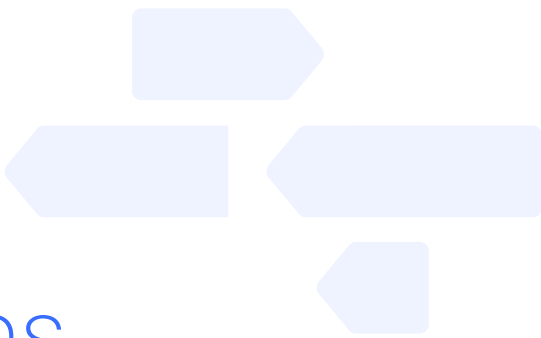


Figure 9: Planned Technology Investments for 2025

Figure 10: Real time monitoring by region



*Question allowed more than one answer and as a result, percentages will add up to more than 100%



Strategic Recommendations

Public transportation agencies face persistent challenges related to workforce shortages, electrification, operational efficiency, and security risks. These strategic recommendations offer actionable solutions to address the most pressing industry concerns outlined in the 2025 State of Public Transportation Report.

1. Prioritize Driver Recruitment, Retention, and Safety

Why? Workforce shortages (49%) and safety concerns (37%) are critical barriers to operational success. Driver well-being, fair compensation, and workplace safety are essential for retention.

Key actions for improvement:

- Implement real-time shift adjustment tools and driver safety technologies to improve efficiency and reduce stress.
- Offer flexible scheduling, part-time options, and smart duty allocation to minimize absenteeism.
- Ensure pay transparency and automated payroll calculations to build trust and prevent disputes.

2. Accelerate the Transition to Zero-Emission Fleets with Regional Customization

Why? Electrification is a growing priority, but infrastructure delays (80%) and funding shortages (55%) remain key barriers. Regulatory hurdles vary across regions.

Key actions for improvement:

- Work with governments and utility providers to secure subsidies and expand charging infrastructure.
- Integrate charging schedules, weather impact, and driver shift planning into operational strategies for seamless EV management.
- Use fast-charging hubs along routes to reduce reliance on depot-only charging.

3. Enhance Passenger Experience Through Advanced Technology

Why? Passenger satisfaction (33%) and real-time insights (43%) are critical for increasing ridership and operational efficiency.

Key actions for improvement:

- Deploy real-time passenger information systems and mobile ticketing solutions for seamless travel.
- Use AI-powered demand forecasting to optimize schedules and reduce inefficiencies.
- Introduce real-time passenger feedback channels to improve service responsiveness.

4. Address Cybersecurity and Data Protection Proactively

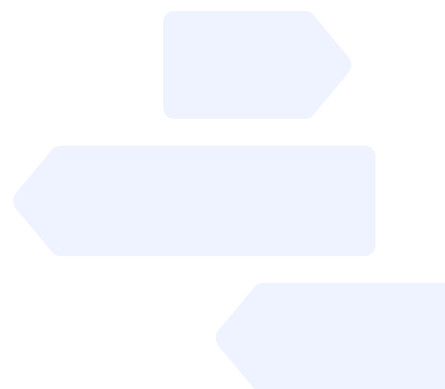
Why? As real-time monitoring (43%) and cloud-based solutions (39%) expand, cybersecurity threats (29%) pose an increasing risk.

Key actions for improvement:

- Implement proactive cybersecurity monitoring and vulnerability assessments.
- Strengthen vendor compliance with security policies and data protection laws.
- Use role-based access control (RBAC) and AI-driven threat detection to secure sensitive transit data.

Conclusion

By addressing driver safety, electrification barriers, passenger experience, operational efficiency, and cybersecurity, public transportation agencies can improve service reliability and long-term sustainability. Investing in technology-driven solutions and workforce initiatives will shape the future of public transportation.



Demographics

Region, Sub-industry, Job seniority, Company fleet

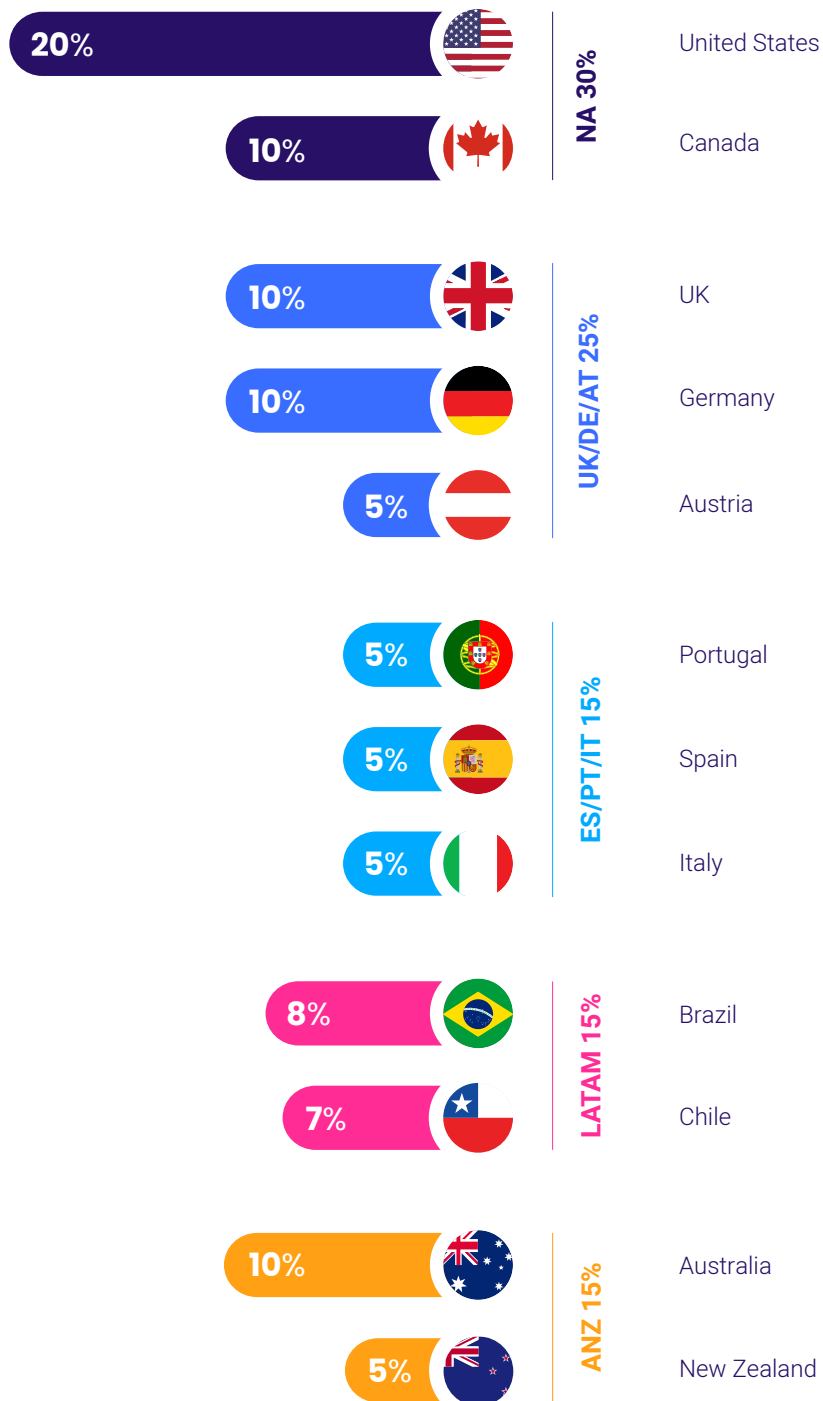


Figure 11: Region

Figure 12: Sub-industry

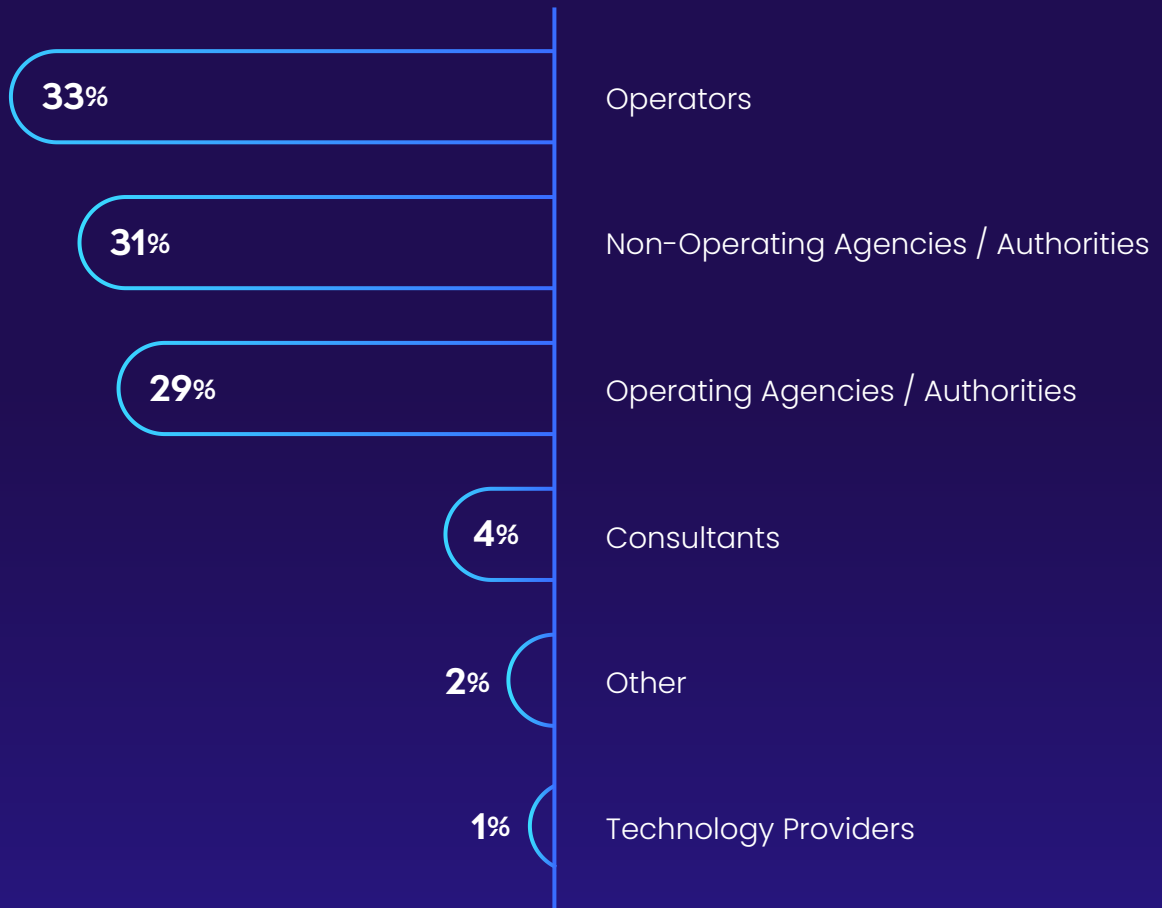
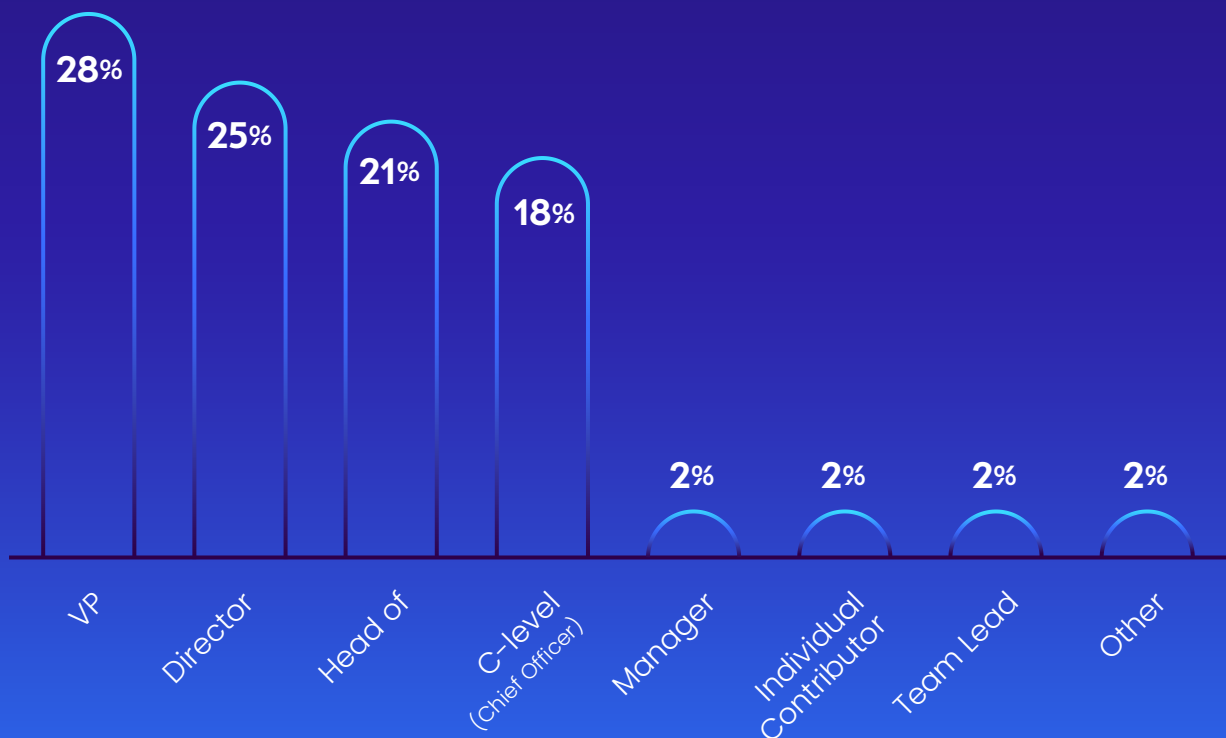
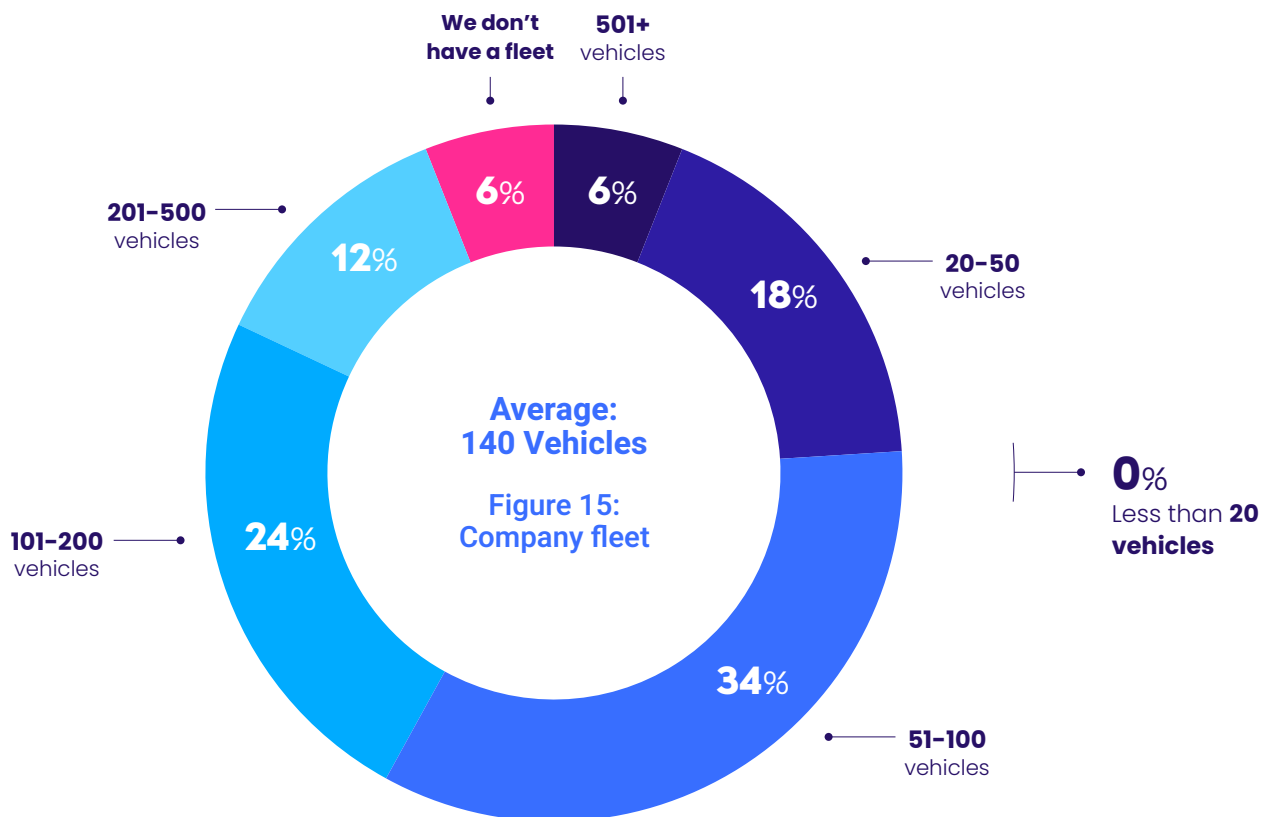
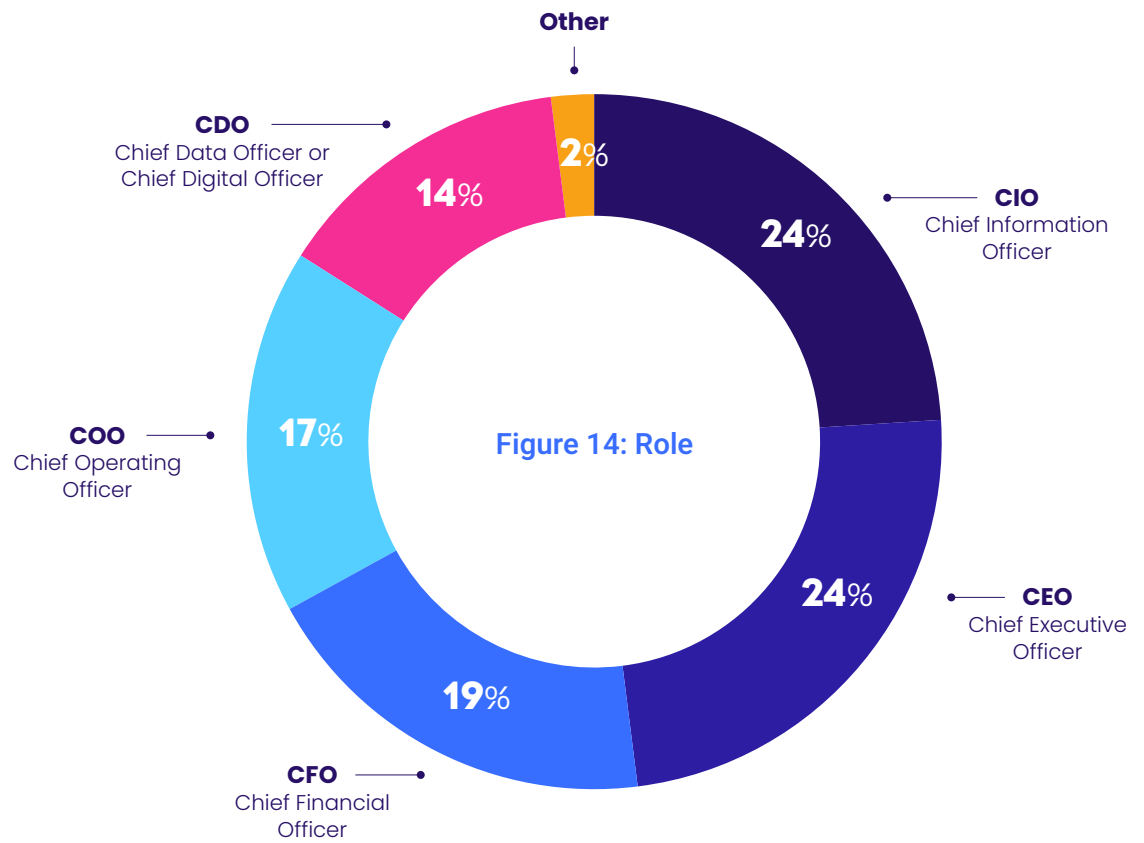
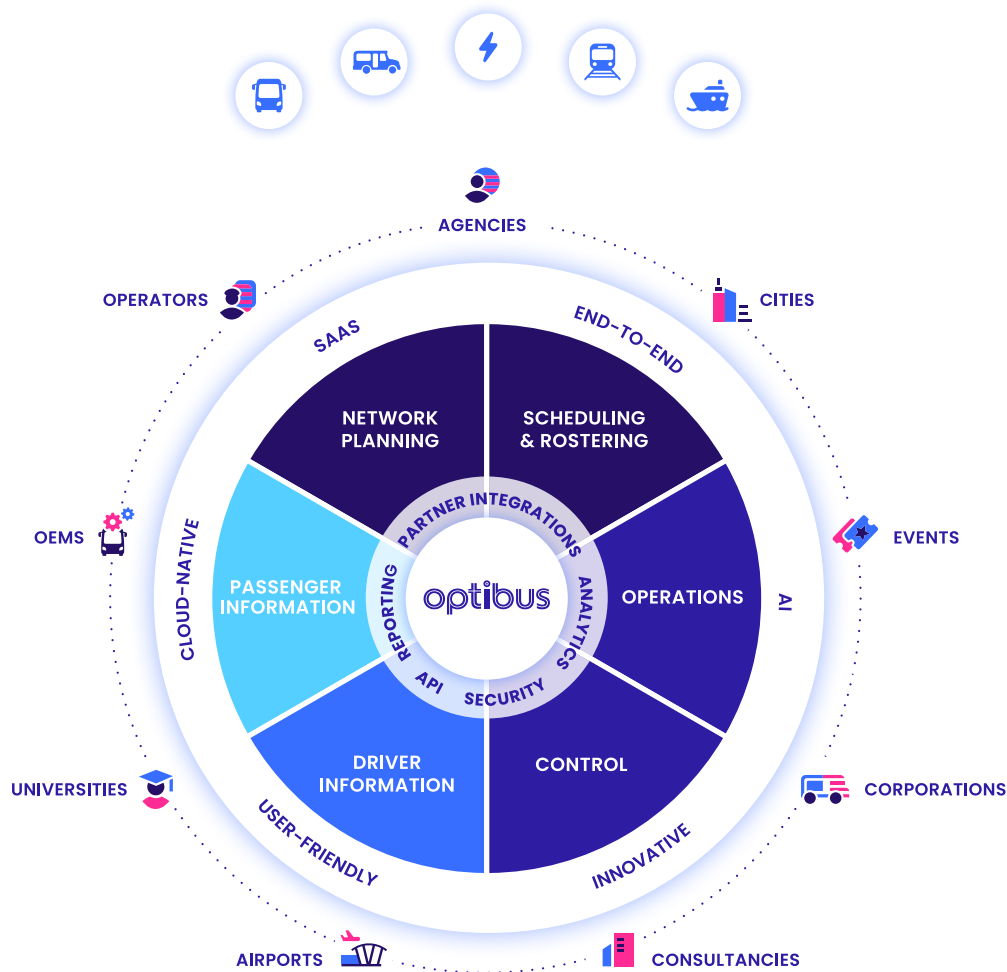


Figure 13: Job seniority





MAKING PUBLIC TRANSPORTATION BETTER. TOGETHER.



About Optibus

Optibus is a unified software platform for public transportation planning, scheduling, rostering, operations, & passenger information. Using artificial intelligence (AI) & optimization algorithms, Optibus helps transportation agencies & operators in thousands of cities across 35 countries to design more efficient, equitable, & sustainable transportation networks. That means fewer emissions & more electric buses, more reliable & accessible services for passengers, better work conditions for drivers, & improved operational efficiency & cost savings for clients. With the closing of its Series D in 2022, Optibus became the first unicorn dedicated to the public transportation sector.

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