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SPOTLOG

Rethinking Logistics: SPOTLOG's Roadmap to Sustainable Last-Mile Solutions



Survey Results

February 2025

SPOTLOG – Stakeholder Survey on Sustainable Last-Mile Delivery

As part of the **SPOTLOG Interreg Europe Project**, a stakeholder survey was conducted to gather valuable insights on current and future challenges related to **last-mile delivery planning and management policies** across the SPOTLOG regions.

Survey Goals

The study aimed to **understand stakeholder perspectives** on key **challenges and opportunities** in last-mile delivery, helping to **improve logistics policies, enhance urban mobility, and foster more sustainable delivery solutions** across the regions.

The survey engaged a diverse range of participants from **nine different regions across Europe**, ensuring a broad representation of perspectives.

Survey Responses by Region:

- Italy** IT
- Portugal** PT
- France** FR
- Latvia** LV
- Poland** PL
- Finland** FI
- Belgium** BE
- Romania** RO
- Moldova** MD

This wide regional participation reflects the importance of **collaborative policymaking** in improving urban logistics and last-mile delivery across Europe.

Who Participated?

The survey engaged a diverse range of stakeholders, including:

- Public sector representatives** (municipalities, city halls, and regional authorities)
- Academia & research institutions** (universities and technical institutions)
- Logistics & transportation companies** (couriers, delivery services, and mobility operators)
- Private sector & business owners** (hotels, shops, and economic operators)
- Retail & commerce organizations** (supermarkets and commercial enterprises)
- Energy & environmental experts** (sustainability-focused organizations)
- Technology & innovation companies** (smart mobility and logistics solutions providers)
- Citizens**, whose perspectives on urban logistics are crucial for shaping better policies

What Will You Find?

The feedback collected will contribute to **policy recommendations and strategic actions** that support more efficient, sustainable, and innovative last-mile delivery systems in European cities. This analysis can provide critical insights that inform strategies for promoting sustainable last-mile delivery, enhance consumer engagement, and ultimately contribute to a more environmentally friendly logistics landscape.

Insights from the SPOTLOG Survey

SPOTLOG Survey Responses: Who We Heard From!

The SPOTLOG survey attracted **95 valuable responses**, with contributions from diverse sectors. To help in understanding the diversity of respondents and their sectoral representation in the survey, a classification of the professions into eight categories based on the provided data was considered and is displayed in the structured table:

Sector Category	Organizations
Public Sector & Government	Comune Rimini, Vidzeme planning region, Municipality of Vidzeme, City of Tampere, Fundão Municipality, Constanta Metropolitan Area, City Hall Constanta, Municipality of Rimini, City Hall of Comrat municipality, A.O. Alianța pentru Dezvoltare Locală Moldova, Stad Mechelen, City of Mechelen
Academia & Research	University of Aveiro, Riga Technical University, Transilvania University of Brasov, University of Porto, University of Coimbra, IPCambra
Logistics & Transportation	A4 Mobility Autostrada BS-VR-VI-PD, Cycle Logistics Operator, Citeliv, WOOP, PORTS OF LILLE, DPD Portugal, XICOS, urbike, DHL, bpost, Ninatrans N.V., DHI International NV, Federation Professionnelle de Cyclologistique
Citizens & General Public	Citizen
Retail & Commerce	BOULANCER, Supermarches Match, Proximus
Energy & Environmental Organizations	Mazowiecka Agencja Energetyczna sp. z o.o., Rimini, Bond Beter Leefmilieu, Gardunha e Xisto
Private Sector & Business Owners	Private economic operator, Owner of hotel, Beach operator, Beach economic operator, Shop owner, Hotel owner, Brisa, Goldenwest Ide
Technology & Innovation	E Mobility Rentals, BEIA Consult SRL, Toro Tech Construct SRL, CNRCMF, Globema, SCOR Cluster, Ingenica.ro SRL, SAMRO TECHNOLOGIES SRL

Concretely, we received the contribution based on the following groups:

- **Citizens & General Public:** 26 responses – The largest group sharing their voices!
- **Public Sector & Government:** 13 responses – Shaping policy and strategy.
- **Logistics & Transportation:** 11 responses – Experts in the field weighing in.
- **Technology & Innovation:** 8 responses – Pioneers pushing the envelope in tech.
- **Academia & Research:** 7 responses – Researchers offering a fresh perspective.

- **Private Sector & Business Owners:** 6 responses – Key players in the business world.
- **Energy & Environmental Organizations:** 4 responses – Advocates for sustainable change.
- **Retail & Commerce:** 3 responses – Insights from the retail sector.
- **Other/Unclassified:** 17 responses – A mix of diverse voices not fitting into a single category.

Together, these responses provide a rich cross-section of perspectives, fueling the conversation on sustainable delivery options!

Understanding Our Survey Approach

The SPOTLOG survey is divided into the following sections:

- **Impacts on Cities and Rural Areas:** this section looks at stakeholders' views on the impacts of last-mile delivery in cities and rural areas.
- **Institutional Cooperation and Leadership:** this section examines how effectively public authorities and private stakeholders are cooperating in the region, the perception of technological development and monitoring of the pace of innovation by Public Authorities and the perception of who should take the lead to promote sustainable last-mile logistics.
- **Environment and Innovation:** this section looks at how public authorities are dealing with environmental issues related to last-mile deliveries.
- **Customer Expectations:** this section looks at the extent to which stakeholders consider different approaches effective in managing customer expectations to promote more sustainable consumer behaviour and minimize last-mile delivery impacts.
- **Operational Challenges to Last-Mile Deliveries:** this section looks at what are the main difficulties in the implementation of sustainable means of last-mile delivery.

1 Impacts on Cities and Rural Areas

The analysis has unveiled significant concerns about the implications of traffic congestion, parking issues, and the accessibility of delivery services, particularly in urban and rural areas.

Traffic Congestion: Respondents expressed that last-mile deliveries contribute notably to traffic congestion in urban centers. With an average rating leaning towards the higher end of the scale, approximately 50% of participants indicated that they experience moderate to severe congestion due to delivery traffic. This suggests a pressing need for strategic planning to manage and mitigate these impacts.

Parking and Loading Disruptions: Parking and loading issues related to last-mile deliveries emerged as another critical concern. Similar to traffic congestion, around 50% of respondents rated the disruptions caused by these issues as significant. This indicates that the flow of traffic and overall safety on the roads are being compromised, warranting immediate attention from city planners and logistics providers.

Impact on Rural Areas: The survey results highlighted a strong belief among participants that limited access to last-mile delivery services adversely affects economic development and quality of life in rural regions. Over 55% of respondents rated the impact as high, underscoring a gap in service provision that could hinder growth opportunities in these areas.

Infrastructure Challenges: When asked about the limited infrastructure in rural regions and its effect on last-mile delivery, respondents largely agreed that inadequate facilities exacerbate delivery difficulties. Nearly 45% acknowledged this issue, indicating a consensus that improvements are necessary to facilitate more efficient logistics operations.

Environmental Concerns: The environmental impact of last-mile deliveries in rural areas was another focal point of concern. Respondents overwhelmingly recognized that the long distances and reliance on fossil fuels contribute to climate change, with about 55% rating the environmental impact as considerable.

▪ Summary Insights

- **Overall perspective:** There is a significant concern among respondents about the impact of last-mile deliveries on traffic congestion, safety, economic development in rural areas, and environmental consequences.
- **High Ratings:** Most respondents rated the congestion and disruptions due to last-mile deliveries as moderate to high, indicating a pressing issue that may require strategic planning and investment in infrastructure.
- **Rural Access:** The belief that limited access to delivery services hampers rural development was strongly affirmed, highlighting a gap in service provision that could be addressed for economic growth.

▪ Recommendations

1. **Policy and Infrastructure Improvements:** Invest in better infrastructure to alleviate congestion and loading issues.
2. **Sustainable Practices:** Encourage eco-friendly delivery methods to mitigate environmental impact.

3. **Focus on Rural Access:** Develop solutions to enhance last-mile delivery access in rural areas to support economic development and improve quality of life.

2 Institutional cooperation and leadership

2.1 OBJECTIVE: To understand how effectively public authorities and private stakeholders are cooperating with each other in the region.

This part of the survey focused on understanding whether stakeholders agree or disagree with three key statements related to engagement, resource sharing, and data culture within the logistics and transportation sectors.

Engagement and Regulation

The first statement focused on whether public authorities engage stakeholders effectively to identify concerns and develop practical regulations. The analysis revealed a moderate level of agreement overall, with an average rating of 4 on a scale from 1 (strongly disagree) to 7 (strongly agree). Notably, respondents from the Public Sector & Government provided a higher average rating of 5, indicating a more positive perception of their engagement efforts. In contrast, Academia & Research participants had a lower average rating of 3, suggesting that they may feel less involved in the stakeholder engagement process.

Resource Sharing

The second statement examined whether transport authorities, urban planning departments, and logistics providers promote the sharing of resources and expertise. The overall average rating for this statement was slightly higher at 4, reflecting a general agreement among participants. Public Sector & Government respondents again rated this aspect positively, averaging 5, which signifies a recognition of collaborative efforts. The Logistics & Transportation group also provided an encouraging average of 4, indicating that they perceive resource-sharing initiatives favourably.

Data Sharing Culture

The final statement addressed the existence of a culture of data sharing and reporting good practices among institutions involved in logistics and transportation. The average rating for this statement was 4, indicating a somewhat positive but cautious agreement. Responses from the Citizens & General Public group reflected an average rating of 4, suggesting that they see some merit in data-sharing practices. However, the Energy & Environmental Organizations and Academia & Research groups showed lower averages (3), indicating scepticism about the current state of data sharing in their sectors.

Summary of Findings

- **Engagement and Regulation:** The responses indicate a moderate level of agreement that public authorities engage stakeholders effectively. The Public Sector & Government respondents had the highest average agreement, suggesting they feel positively about their engagement efforts.
- **Resource Sharing:** There is a slightly stronger agreement on resource sharing and expertise promotion, particularly among public sector participants. This may reflect a recognition of collaborative efforts in logistics and transportation.

- **Data Sharing Culture:** The overall perception of a culture of data sharing is somewhat lower compared to the other two statements, indicating room for improvement in fostering an environment conducive to sharing practices.

▀ Recommendations

1. **Develop a Strategic Plan:** Create a comprehensive strategic plan to address the identified challenges and opportunities in stakeholder engagement, resource sharing, and data culture.
2. **Monitor and Evaluate Progress:**
 - Establish key performance indicators (KPIs) to monitor and evaluate the effectiveness of implemented strategies.
 - Regularly review and update the strategic plan based on feedback and performance data.
3. **Facilitate Cross-Sector Collaboration:**
 - Actively work to break down silos between sectors and promote a culture of collaboration.
 - Work to create a common goal between all the sectors to improve the last-mile delivery systems.

2.2 OBJECTIVE: To understand the perception of technological development and monitoring of the pace of innovation by Public Authorities.

In this subsection, we asked stakeholders to provide their perspectives regarding the statements on last-mile logistics and the role of public authorities

Last-mile logistics coupled with new technologies and delivery methods are rapidly evolving.

The responses indicate a generally positive sentiment, with an average score of 5.4 out of a possible 7. This suggests that most participants agree that last-mile logistics are adapting swiftly in response to technological advancements. Approximately 36% of respondents expressed strong agreement with this statement, while 30% remained neutral, and 15% disagreed, indicating a significant recognition of progress in this area.

Public authorities are aware of technological advancements and develop regulations that are effective and relevant.

Respondents rated this statement with an average score of 5.3. Similar to the previous statement, there was a notable level of agreement, with 36% agreeing and only 18% disagreeing. This suggests that while participants generally believe in the awareness of public authorities regarding technological advancements, there remains some skepticism about the effectiveness and relevance of the regulations being developed.

Public authorities collaborate with industry experts to understand emerging technologies and their potential impact on last-mile logistics.

This statement received the lowest average score of 5.1, indicating more mixed feelings among respondents. While 30% agreed with the statement, 21% disagreed, highlighting concerns about the

level of collaboration between public authorities and industry experts. This could signal a need for increased engagement and dialogue to enhance understanding and foster effective partnerships.

▪ Summary of Findings

- **Agreement Levels:** The responses indicate a general agreement with the statements, particularly regarding the evolution of last-mile logistics and the awareness of public authorities.
- **Areas of Concern:** There is a notable percentage of respondents expressing disagreement, particularly regarding public authorities' collaboration with industry experts, indicating a potential area for improvement.
- **Variability Among Sectors:** Responses from different sectors (Public Sector, Academia, Citizens) might reflect varying levels of engagement and perspectives on these issues.

▪ Recommendations

1. **Focus on Collaboration:** Get public authorities and industry experts talking regularly; Work together on pilot projects to test new ideas; Share information and best practices.
2. **Improve Regulations:** Update rules to keep pace with technology; Offer incentives for sustainable solutions; Make it easier to approve new technologies.

2.3 OBJECTIVE: To understand the perception of who should take the lead to promote sustainable last-mile logistics.

The core actionable strategies for sustainable last-mile deliveries considered in our survey were:

1. Private logistics operators should take responsibility for investing in micro hubs.
2. Public-private partnerships should be considered the most effective way to lead and address challenges in last-mile delivery.
3. Regional public authorities should provide incentives for private investment in last-mile delivery infrastructure.
4. Public authorities should take a leadership role in promoting sustainable last-mile delivery practices.

Stakeholder Roles and Importance

The data revealed that respondents generally agreed on the importance of collaboration and leadership in sustainable logistics. Public authorities were identified as crucial players, with an average score of 5.6 out of 7, indicating strong support for their role in setting policies and regulations to promote sustainable practices. Public-private partnerships also received high marks, with an average score of 5.5, underscoring the belief that collaboration between government and industry is essential to address challenges in last-mile delivery.

The Role of Private Logistics Operators

Private logistics operators were recognized for their expertise and resources, receiving an average score of 5.0. However, their role was seen as slightly less critical compared to public authorities, suggesting that respondents favored a balanced approach involving multiple stakeholders rather than placing sole responsibility on private operators.

Citizens' Perspectives

The general public's responses indicated a preference for greater government involvement in sustainable logistics initiatives, with average scores reflecting a cautious stance towards the leadership of private logistics operators. This highlights a desire for accountability and transparency in the logistics sector, emphasizing the importance of public sector leadership.

Retail & Commerce Support

The retail and commerce sector demonstrated the strongest endorsement for all proposed roles, with an average score of 6.1. This suggests that businesses within this sector recognize the necessity for sustainable logistics practices and are likely to support measures that foster innovation and competition in last-mile delivery.

Summary of Findings

- **Public Authorities and Public-Private Partnerships:** Public authorities and public-private partnerships were rated highly across most groups, particularly by the Public Sector & Government and Logistics & Transportation groups. This suggests a consensus on the importance of collaboration and leadership in sustainable logistics.
- **Private Logistics Operators:** Although important, the role of private logistics operators scored slightly lower on average compared to public authorities, indicating that respondents see a shared responsibility.
- **Citizens' Perspectives:** Citizens and the general public were less convinced about the leadership role of private logistics operators, suggesting a preference for governmental intervention.
- **Retail & Commerce:** This group had the highest average scores across all statements, indicating strong support for proactive measures in sustainable logistics.

Recommendations

1. **Boost Public-Private Collaboration:** Strengthen partnerships between governments and logistics companies to improve last-mile delivery and promote sustainability.
2. **Increase Government Leadership:** Develop stronger policies and regulations to ensure transparency, accountability, and greener logistics practices.
3. **Engage the Retail Sector:** Support businesses in adopting sustainable logistics through incentives, funding, and innovation programs.

3 Environment and Innovation

OBJECTIVE: To determine how public authorities are dealing with the environmental issues related to last-mile deliveries.

3.1 Environment

Environmental Impact and Regulations: A majority of respondents, accounting for 58.8%, expressed agreement with the statement that last-mile logistics have a growing and significant environmental impact, necessitating stricter regulations to ensure sustainability. This strong consensus underscores a prevalent concern among participants regarding the environmental footprint of logistics operations. Only 12.5% of respondents disagreed, indicating minimal opposition to the idea that regulatory measures are essential in this context.

Investment in Sustainable Infrastructure: When asked about the increasing investment in infrastructure to support sustainable last-mile logistics systems, 52.5% of participants agreed with this assertion. This suggests a recognition of ongoing efforts to enhance sustainability within the logistics sector. However, 32.5% of respondents remained neutral, indicating a degree of uncertainty or ambivalence about the extent of these investments. Meanwhile, 13.75% disagreed, highlighting a small but notable skepticism about the level of investment in sustainability initiatives.

Qualified Personnel in Public Authorities: The perception of public authorities' access to qualified personnel knowledgeable about the impact and key performance indicators of delivery solutions garnered an agreement from 50% of respondents. This reflects a balanced view, though it also reveals a significant 37.5% of participants who chose a neutral stance, suggesting that many are unsure about the competencies available within public agencies. Only 11.25% disagreed, pointing to a general belief that there is some level of expertise within the public sector, albeit with room for improvement.

■ Summary of Findings

- **Environmental Concerns & Regulations** – Most respondents (58.8%) agree that last-mile logistics have a major environmental impact, supporting stricter regulations to promote sustainability.
- **Investment in Sustainable Infrastructure** – Over half (52.5%) acknowledge increased investments in sustainable logistics, though a significant portion (32.5%) remain uncertain about the extent of these efforts.
- **Public Sector Expertise** – While 50% believe public authorities have qualified personnel for logistics planning, a large neutral response (37.5%) suggests uncertainty about their expertise.

■ Recommendations

1. **Strengthen Environmental Regulations:** Public authorities should implement stricter policies to reduce the environmental impact of last-mile deliveries, such as emission caps, low-emission zones, and incentives for green delivery solutions.

2. **Increase Investment in Sustainable Infrastructure:** To address scepticism about current efforts, authorities should expand funding for eco-friendly logistics infrastructure, such as electric vehicle charging stations and urban consolidation centers.
3. **Enhance Public Sector Expertise:** Governments should provide more training and hire specialists to improve their capacity to manage sustainable logistics, ensuring effective policy implementation and public confidence.

3.2 Innovation

Under this subsection, we asked stakeholders to rate the importance of several statements related to the role of public authorities in promoting sustainable last-mile logistics. The analysis indicates a strong consensus among stakeholders on the importance of establishing effective regulations and providing infrastructure support for electric vehicles as key roles for public authorities in promoting sustainable last-mile logistics.

- **High Priority Areas:** The highest-rated statements were focused on regulatory frameworks and infrastructure support, highlighting the need for public authorities to create an environment conducive to sustainable logistics practices. Specifically, providing infrastructure support for electric vehicles and establishing effective regulations were prioritized.
- **Moderate Priority Areas:** Financial incentives, education, and collaboration with businesses were also viewed positively, but to a slightly lesser extent. This suggests stakeholders believe that while incentives and educational efforts are important, they may not be as critical as regulatory measures and infrastructure development.
- **Low Priority Areas:** Imposing restrictions without support infrastructures, along with the adoption of automated vehicles and drone technology, received lower ratings. This indicates a preference for comprehensive approaches rather than piecemeal restrictions or unproven technologies without foundational support.

Summary of Findings

- **High Priority Areas** – Stakeholders strongly support **effective regulations (5.6)** and **infrastructure support for electric vehicles (5.9)** as essential for sustainable last-mile logistics.
- **Moderate Priority Areas** – Financial incentives (5.3), education (5.7), and business collaboration (5.8) are also valued but seen as secondary to regulations and infrastructure.
- **Low Priority Areas** – Imposing restrictions without support (3.2), automated vehicles (4.5), and drone technology (4.0) received lower ratings, indicating skepticism about these approaches.

Recommendations

1. **Increase Engagement:** Foster more dialogue between public authorities and industry experts to build trust and collaboration.
2. **Enhance Incentives:** Explore additional incentives for innovation to boost participation from various sectors.

3. **Monitor Progress:** Regularly assess the effectiveness of current initiatives and adapt strategies based on stakeholder feedback.

4 Customer expectations

OBJECTIVES: To determine to what extent stakeholders consider the following approaches effective in managing customer expectations to promote more sustainable consumer behaviour and minimise last-mile delivery impacts.

Considering the stakeholder's perspectives in this section, the analysis of the effectiveness of various measures aimed at encouraging consumers to choose sustainable last-mile delivery options. The measures assessed include:

Clear Information on Environmental Impact: With an average rating of 5.33, this measure was widely supported, particularly by the Logistics & Transportation sector (6.16), highlighting its perceived importance in raising awareness.

Incentives for Slower Delivery Options: This measure received mixed support (4.79 average), with lower backing from the Public Sector (4.00) but stronger agreement from Logistics & Transportation (5.50), reflecting varying perspectives on delivery speed trade-offs.

Promoting Reusable Packaging: Scoring an average of 5.39, this initiative was well-received across sectors, with Energy & Environmental Organizations rating it highest (7.00), emphasizing its role in waste reduction.

Raising Awareness on Sustainable Options: The highest-rated measure (5.68 average), strongly endorsed by Public Sector & Government (6.67) and Energy & Environmental Organizations (7.00), underscoring the value of education in driving sustainable choices.

Encouraging Alternative Delivery Options: With an average score of 5.14, support was varied, with Public Sector & Government showing stronger backing (6.00) while Logistics & Transportation (5.00) remained more reserved, indicating differing priorities in last-mile logistics.

■ Summary of Findings

- **Strong Support for Awareness & Education:** Raising awareness about sustainable delivery options received the highest overall rating (5.68), particularly from the Public Sector (6.67) and Energy & Environmental Organizations (7.00).
- **Importance of Clear Environmental Information:** Providing clear data on environmental impact was widely supported (5.33 average), with Logistics & Transportation rating it highest (6.16), emphasizing its role in decision-making.
- **Positive Reception for Reusable Packaging:** This measure (5.39 average) was particularly endorsed by Energy & Environmental Organizations (7.00), highlighting its potential to reduce waste.

- **Mixed Views on Incentives for Slower Deliveries:** With the lowest average rating (4.79), this measure faced low support from the Public Sector (4.00) but was rated higher by Logistics & Transportation (5.50), indicating sectoral differences in priorities.

▣ Recommendations

1. **Enhance Awareness Campaigns:** Develop targeted educational initiatives to inform businesses and consumers about the benefits of sustainable delivery options.
2. **Strengthen Environmental Impact Transparency:** Provide clear, accessible information on logistics' environmental footprint to encourage more sustainable choices.
3. **Promote and Incentivize Reusable Packaging:** Introduce policies and incentives to increase adoption, leveraging strong support from sustainability-focused sectors.
4. **Reevaluate Slow Delivery Incentives:** Address sector concerns by refining strategies, such as offering additional benefits (e.g., lower costs or loyalty rewards) for choosing slower, eco-friendly delivery options.

5 Operational challenges to last-mile deliveries

OBJECTIVE: To understand the Stakeholders' vision about the main difficulties to the implementation of sustainable means of last-mile delivery.

The survey results reveal critical insights into the challenges faced in implementing sustainable last-mile delivery systems. Each identified issue highlights significant barriers that stakeholders must address to foster a more sustainable logistics framework.

Lack of Infrastructure: The most pressing concern, rated at an average of 5.3, is the lack of adequate infrastructure. Respondents from various sectors have underscored the necessity for improved bike lanes and secure parking facilities. This finding suggests that without the proper infrastructure, the viability of sustainable delivery methods will remain limited. Developing a supportive infrastructure is essential not only for facilitating deliveries but also for encouraging businesses to transition to more sustainable practices.

High Initial Costs: With an average rating of 5.1, the high initial costs of acquiring and maintaining sustainable delivery vehicles were identified as a significant barrier. This concern is particularly pronounced among logistics and transportation stakeholders who often face budget constraints. Addressing these financial challenges through targeted financial incentives or subsidies could help mitigate the burden and encourage more businesses to invest in sustainable solutions.

Limited Workforce Availability: The availability of a skilled workforce to operate and maintain sustainable delivery vehicles, rated at 4.1, presents another hurdle. Respondents highlighted that this issue is particularly critical in sectors closely related to logistics. To address this, companies and training institutions should collaborate to develop educational programs that equip individuals with the necessary skills. Ensuring a skilled workforce is crucial for the successful adoption and operation of sustainable delivery systems.

Resistance to Change: Averaging 4.5, the resistance to changing from traditional delivery methods reflects a significant cultural barrier. Many respondents noted the challenges of shifting established mindsets within companies. To overcome this resistance, stakeholders could engage in awareness campaigns that highlight the benefits of sustainable practices, showcasing successful case studies and demonstrating the long-term advantages of adopting new methods.

Lack of Support and Incentives: The desire for greater support from public authorities, rated at 4.8, indicates a clear need for policy intervention. Respondents expressed that public incentives could play a vital role in promoting the adoption of sustainable practices. This could include financial assistance, grants, or tax breaks for businesses that invest in sustainable delivery options, ultimately fostering a more conducive environment for change.

Operational Obstacles: Operational hurdles, rated at 4.6, encompass issues such as the limited range and capacity of sustainable delivery vehicles and challenges related to urban navigation. These operational challenges could hinder efficiency and effectiveness in last-mile delivery. Addressing these concerns may involve investing in more versatile and efficient vehicles, as well as improving navigation systems to facilitate smoother deliveries in urban settings.

Lack of Micro Hubs: Finally, the lack of micro hubs, with a rating of 4.3, was recognized as an important factor that could enhance last-mile delivery efficiency. Establishing micro hubs in strategic locations can reduce delivery times, lower transportation costs, and streamline logistics operations. Encouraging partnerships between businesses and local authorities to develop these hubs can lead to a more integrated and efficient delivery system.

▪ Summary of Findings

- **Infrastructure Challenges:** The survey highlights a critical need for improved infrastructure, specifically better bike lanes and secure parking facilities to facilitate sustainable last-mile deliveries.
- **Financial Barriers:** High initial costs related to the acquisition and maintenance of sustainable delivery vehicles are seen as a significant obstacle, particularly impacting the logistics and transportation sectors.
- **Workforce Availability:** There are concerns regarding the availability of a skilled workforce capable of operating and maintaining sustainable delivery vehicles, which is crucial for successful implementation.
- **Resistance to Change:** Many respondents noted resistance to adopting new delivery methods over traditional practices, indicating a challenge in shifting mindsets within established companies.
- **Support and Incentives:** A strong desire for greater support and incentives from public authorities was expressed, emphasizing the need for encouragement to transition to sustainable practices.
- **Operational Challenges:** Respondents identified various operational challenges, including limitations in the range and capacity of sustainable delivery vehicles, difficulties in urban navigation, and the absence of micro hubs to enhance last-mile delivery efficiency.

■ Recommendations

- 1. Invest in Infrastructure Development:** Prioritize building dedicated bike lanes, secure parking, and micro hubs to create a supportive environment for sustainable last-mile deliveries.
- 2. Create Financial Incentives and Support Programs:** Implement grants, subsidies, or tax breaks to help businesses offset the high initial costs of sustainable delivery vehicles, encouraging the transition to greener practices.
- 3. Facilitate Workforce Training and Education Initiatives:** Collaborate with educational institutions and industry stakeholders to develop training programs that equip the workforce with the necessary skills for sustainable logistics, addressing the skills gap identified in the survey.

Analysis of Open Questions

Insights from Open Responses

The analysis of open-ended responses revealed several recurring themes and suggestions aimed at addressing last-mile delivery challenges:

Cycle Logistics: As mentioned by 14 respondents (22%), cycle logistics was emphasized as a crucial solution for urban deliveries. Many participants advocated for the use of bicycles in congested areas to enhance sustainability and reduce traffic.

Electric Vehicles: With 10 mentions (16%), there was a strong desire for integrating electric vans and bikes into delivery systems, reflecting a push for greener options in last-mile logistics.

Micro-Hubs/Distribution Centers: Six respondents (10%) suggested establishing micro-hubs to facilitate more efficient deliveries. These hubs can reduce the need for long-distance transportation and improve delivery times, particularly in urban settings.

Shared and Mutualized Delivery: Suggested by 7 participants (11%), this approach promotes collaboration among multiple companies to optimize routes and reduce congestion, enhancing efficiency in last-mile deliveries.

Community Cooperation: Five mentions (8%) highlighted the importance of local collaboration for deliveries, suggesting that community involvement could lower environmental impact and enhance efficiency.

Infrastructure Development: Five respondents (8%) called for improvements in delivery access points, dedicated parking, and enhanced public transport connections to support last-mile operations.

Policy and Regulation: Six respondents (10%) suggested clearer policies to support last-mile delivery systems and encourage eco-friendly practices.

Innovative Technologies: Three mentions (5%) included the use of drones and other innovative technologies to streamline logistics and enhance delivery efficiency.

Responses from participants offered additional perspectives:

- A4 Mobility (Italy) emphasized focusing on higher-value items designed for longevity, paired with comprehensive maintenance programs.
- Citizens in Italy and France highlighted the need for cycle logistics and mutualized delivery vehicles, advocating for collaboration to improve urban delivery efficiency.
- Respondents from Portugal suggested involving local businesses as drop-off and pick-up locations to enhance community engagement in delivery processes.
- In Latvia, there were calls for cooperation among delivery services to enhance efficiency, particularly in urban settings.

Perspectives for More Sustainable Last-Mile Delivery Operations

The survey results illustrate a strong inclination toward sustainable and cooperative delivery solutions. Emphasizing cycle logistics and electric vehicles aligns with the global push for greener practices. The establishment of micro-hubs and shared delivery systems can significantly improve efficiency and reduce congestion in urban environments. Furthermore, community cooperation and infrastructure development are essential for fostering an environment that supports sustainable delivery practices.

Measures for Improving Technological Adaptation by Public Authorities

Respondents also provided insights on enhancing the pace of technological adaptation in last-mile logistics. The analysis revealed:

Collaboration and Coordination: Many emphasized the need for improved partnerships between public authorities and private logistics operators. Suggestions included creating working groups for collaborative problem-solving.

Pilot Projects: Five respondents advocated for pilot projects to test new technologies, allowing for refined solutions before wider implementation.

Regulatory Framework: Clear regulatory measures were deemed necessary to support the introduction of new technologies, promoting proactive governance.

Infrastructure Development: Respondents called for investments in digital infrastructure to facilitate data sharing and support technological solutions.

Public Awareness: Some emphasized the importance of information campaigns to raise awareness about the benefits of technological adaptation and sustainable practices.

Conclusion on Insights from the SPOTLOG Survey

The SPOTLOG survey has provided a comprehensive overview of the barriers, challenges, and opportunities associated with deploying sustainable last-mile delivery solutions. The results reveal a collective acknowledgement among stakeholders regarding the pressing issues that hinder the advancement of sustainable practices in this sector.

Key Insights

- 1. Infrastructure and Financial Barriers:** Respondents consistently identified infrastructure and financial challenges as critical obstacles. The need for better bike lanes, secure parking, and improved access in rural areas highlights a significant gap in current delivery infrastructure. Addressing these issues is vital for enhancing urban traffic conditions and fostering economic development, particularly in underserved communities.
- 2. Collaboration and Stakeholder Engagement:** The survey underscores the importance of collaboration among public authorities, private logistics operators, and community stakeholders. There is a strong sentiment that inclusive discussions and resource-sharing initiatives are essential for developing effective strategies for sustainable logistics. The varying perspectives across stakeholder groups highlight the necessity for a collaborative environment that encourages engagement and trust.
- 3. Technological Adaptation and Innovation:** While there is optimism regarding the adaptation of new technologies in last-mile logistics, concerns about collaboration between public authorities and industry experts indicate a need for stronger partnerships. By fostering dialogue and cooperation, public authorities can enhance their understanding of emerging technologies and develop regulatory frameworks that support innovative solutions.
- 4. Consumer Behavior and Awareness:** The survey highlights the need to enhance transparency and awareness of sustainable practices to drive consumer behaviour toward eco-friendly last-mile delivery options. Stakeholders must prioritize effective communication strategies and innovative incentives to engage consumers actively in sustainable practices.
- 5. Education and Capacity Building:** Respondents expressed the need for increased education and capacity building within public authorities to facilitate the adoption of sustainable practices. This includes workforce training, understanding emerging technologies, and creating clear regulatory frameworks that promote sustainability.
- 6. Community Involvement:** There is a strong call for community involvement in last-mile delivery solutions, particularly through local partnerships and innovative approaches like micro-hubs. Engaging local businesses and communities can enhance delivery efficiency and lower environmental impacts.

Opportunities for Improvement

The survey reveals numerous opportunities for enhancing sustainable last-mile delivery operations:

- **Investing in Infrastructure:** Prioritizing infrastructure development, particularly in urban and rural areas, is essential for supporting sustainable delivery methods.
- **Enhancing Collaboration:** Creating platforms for collaboration among stakeholders can improve transparency and facilitate resource sharing, ultimately leading to more effective logistics practices.
- **Fostering Innovation:** Encouraging pilot projects and partnerships with technology providers can help test new solutions and refine approaches before broader implementation.
- **Promoting Consumer Engagement:** Innovative marketing campaigns, community involvement, and educational initiatives can foster a culture of sustainability among consumers.
- **Implementing Supportive Policies:** Regulatory frameworks that support sustainable practices and provide incentives for adopting green technologies will be critical in driving change.

General Conclusion

In summary, the SPOTLOG survey highlights a robust awareness of the environmental challenges associated with last-mile logistics and a collective call for regulatory action. While stakeholders express optimism about infrastructure investments and the presence of qualified personnel, the need for increased transparency and communication regarding these efforts remains evident. Addressing the barriers identified in the survey through collaborative efforts, innovative solutions, and community engagement will be crucial for creating a more sustainable last-mile delivery ecosystem. Ultimately, the insights from this survey should inform future strategies aimed at promoting sustainability in logistics and enhancing the overall quality of life in both urban and rural communities.